VISIT…

Introduction to Lockpicking & Key Bumping

by datagram

Animations by Deviant Ollam

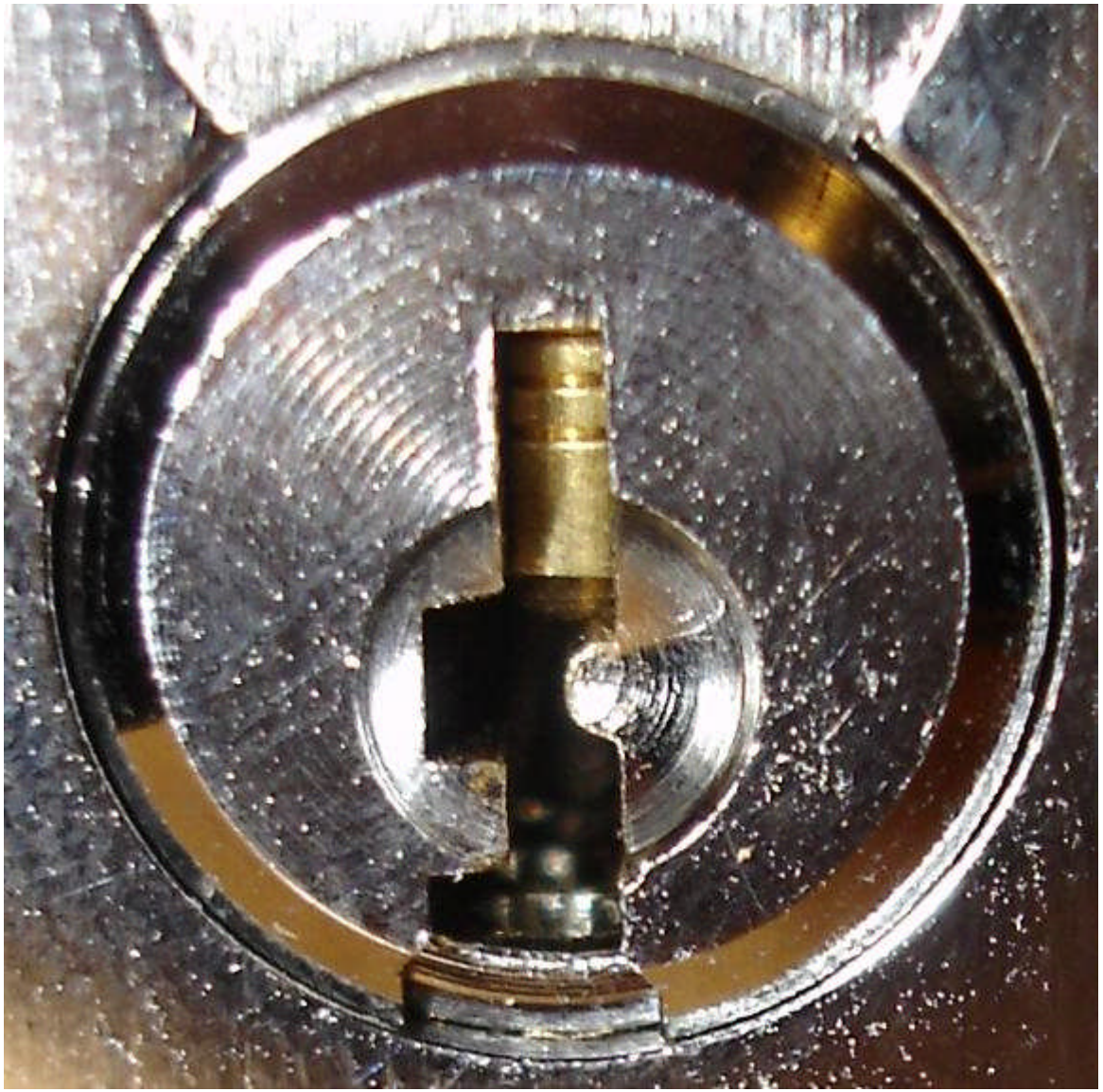
About Me

- Mild mannered Sys. Admin.
- C,C++,Python,ASM, etc. Programmer
- Enjoys long walks on the beach
- Hacke…Computer Security Enthusiast
- Lockpicking Enthusiast, would eventually like to become a bonafide locksmith.

Introduction To Lockpicking

- How Locks Work
- How Keys Work
- Picking a Lock
- Types of Locks

How Locks Work



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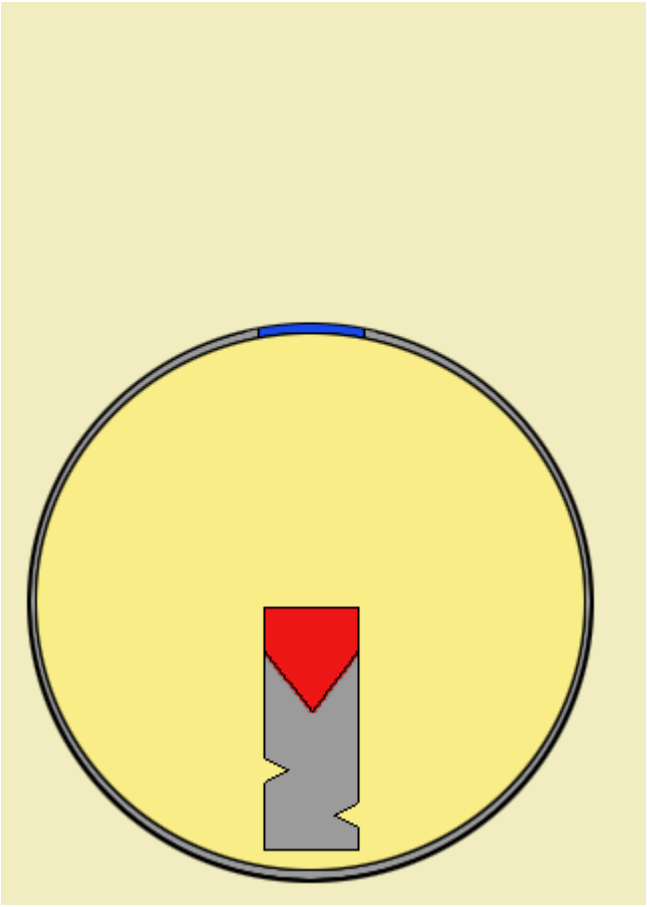
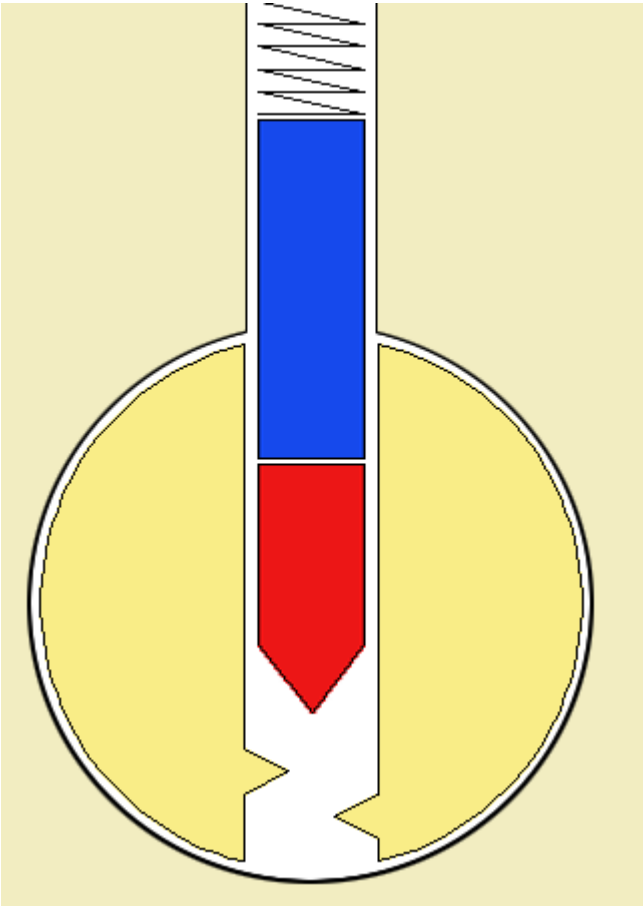
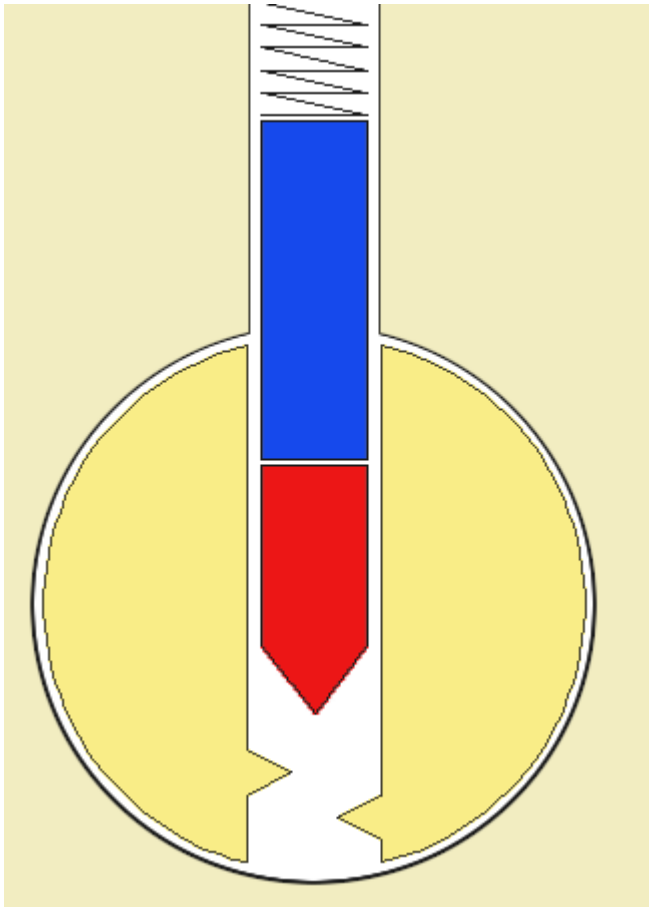




How Locks Work



How Locks Work

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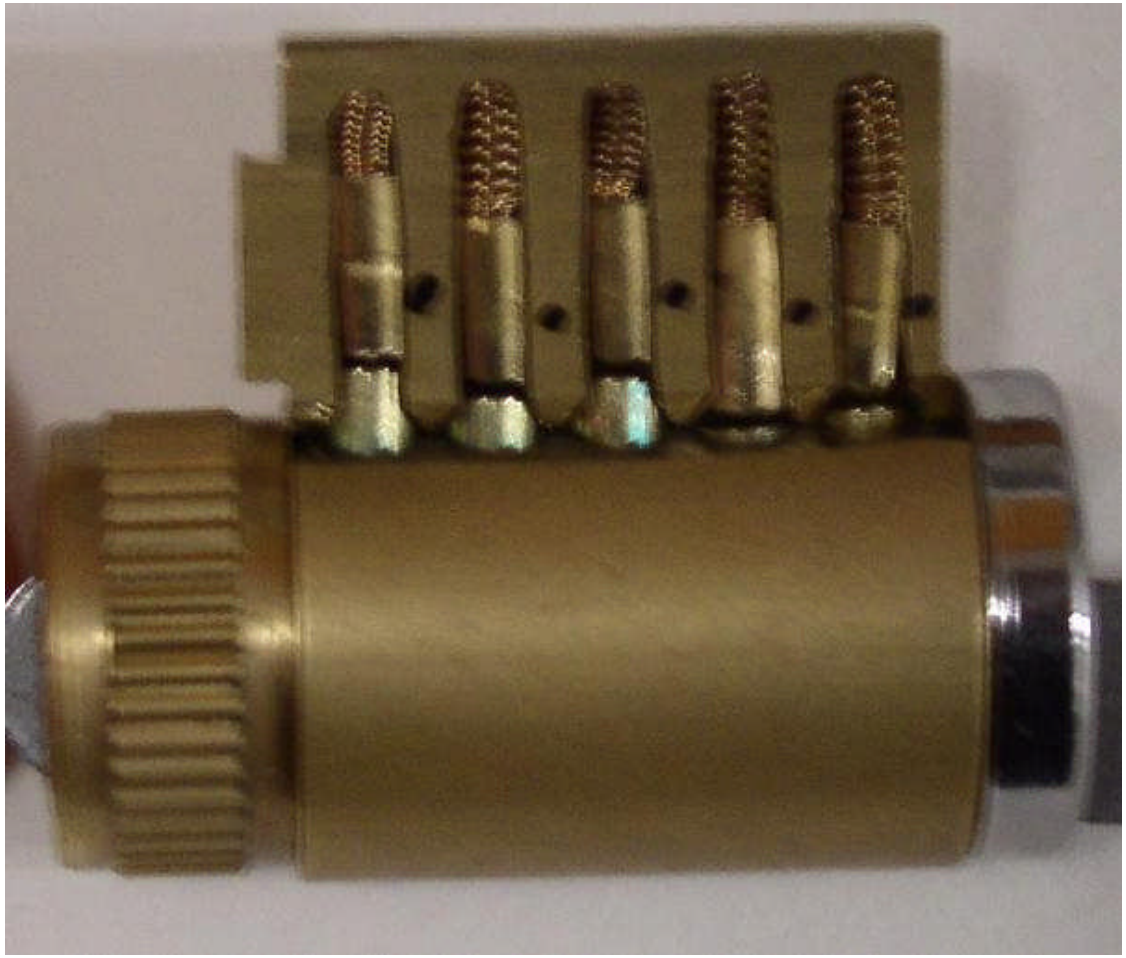
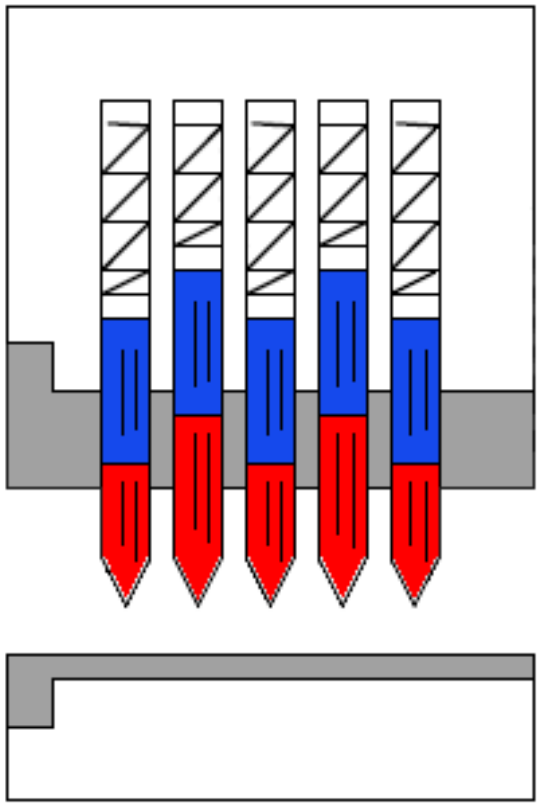
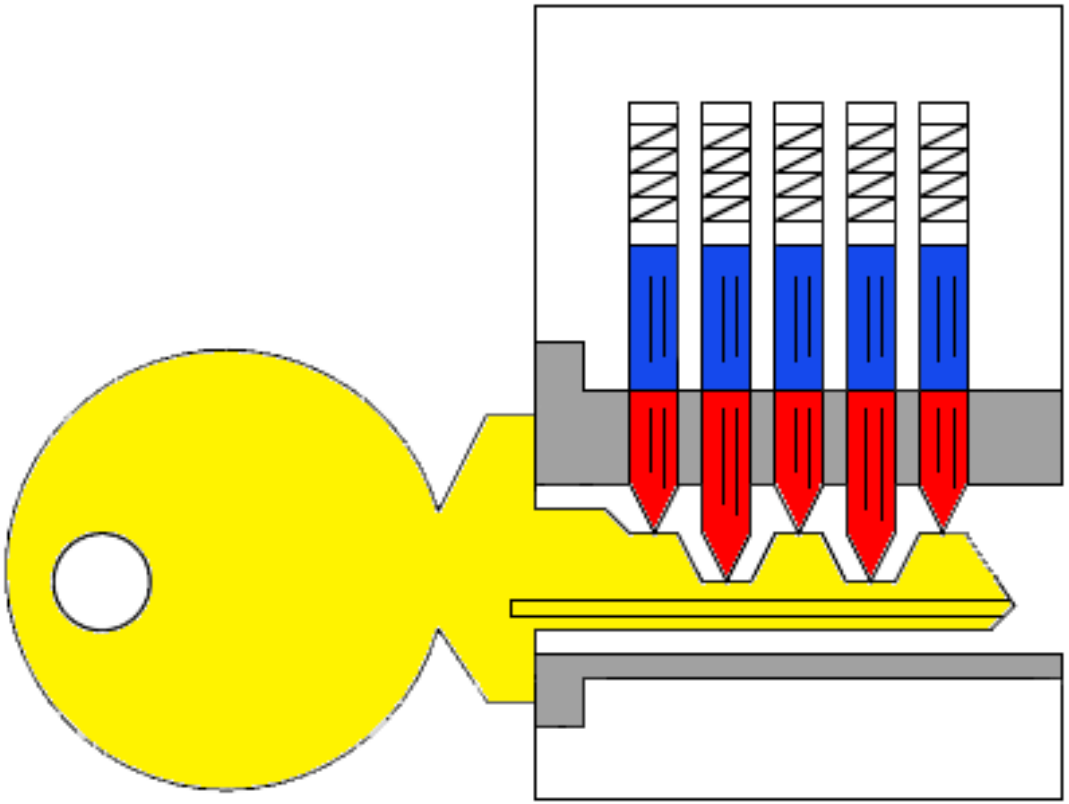


How Keys Work





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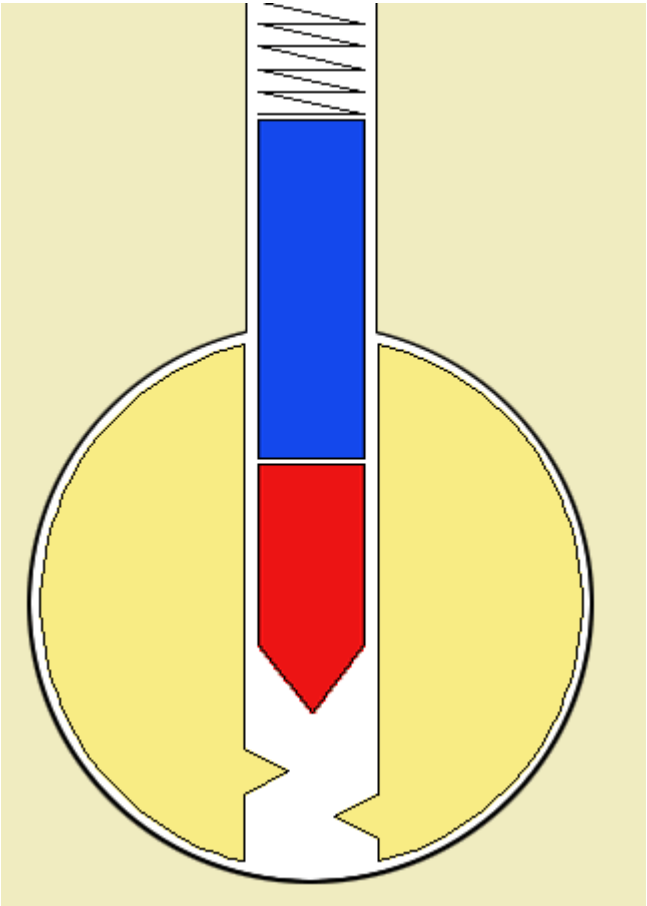
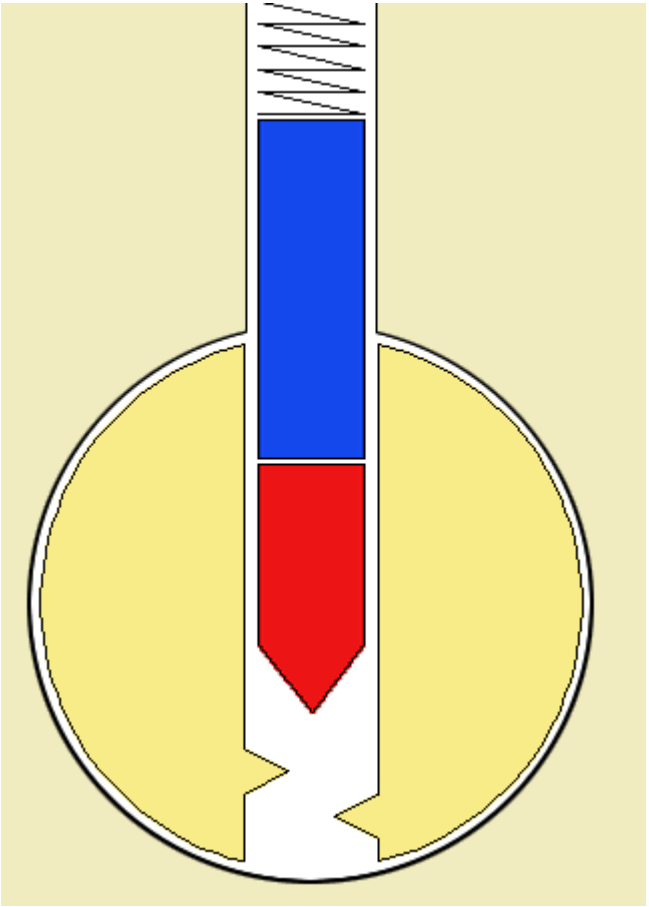


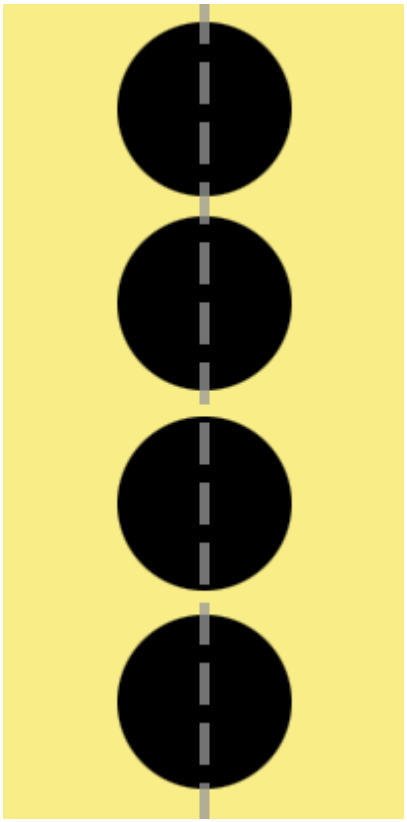
Picking a Lock

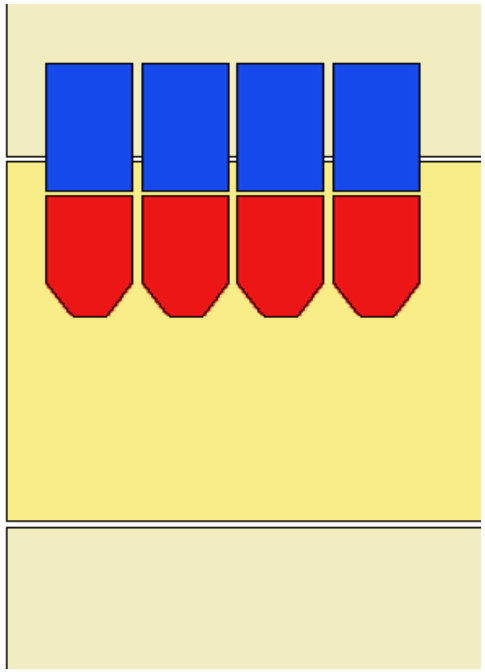
- Apply (minimal) torque
- Find binding pin
- Raise all pin pairs to shear line

Setting a Pin

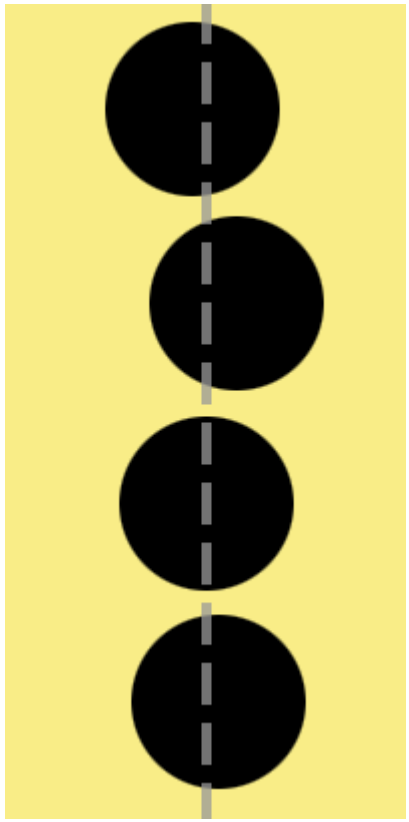


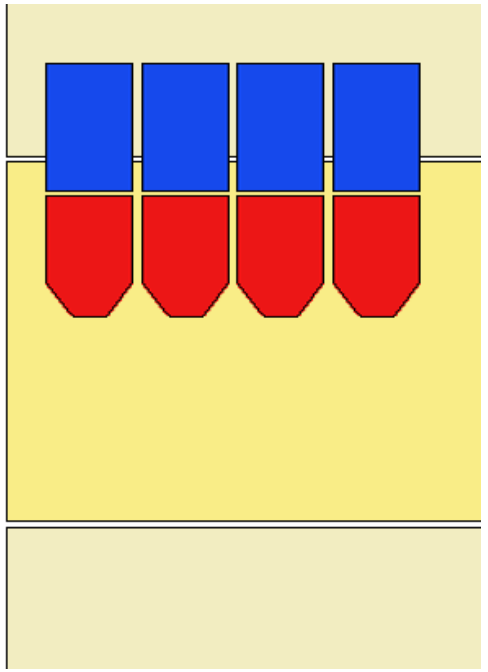
Pin Binding Explained



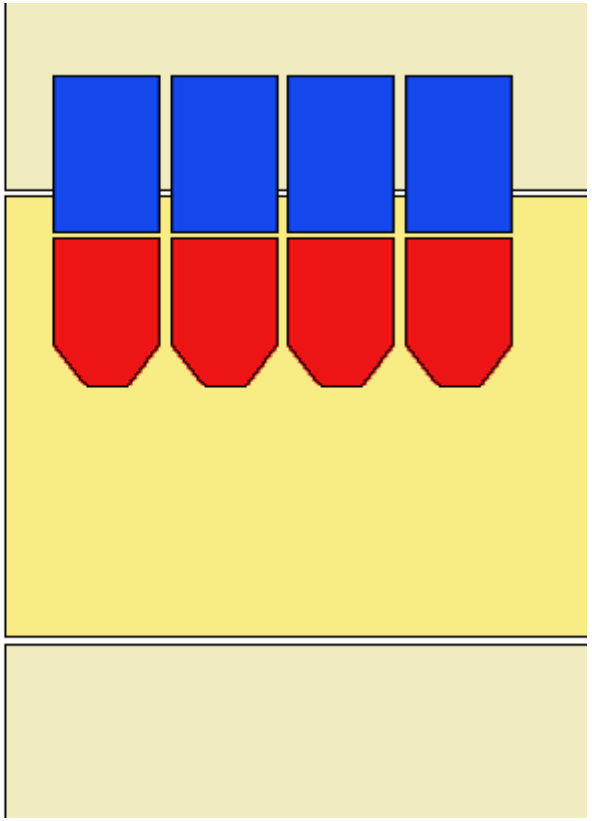


Pin Binding Explained





Picking a lock



High Security Locks

- Usually offer one/more of the following:
  - Restrictive Keyways
  - Security Pins
  - Side Pin
  - Side Bars
  - Axial Rotation

Restrictive Keyways (BEST)

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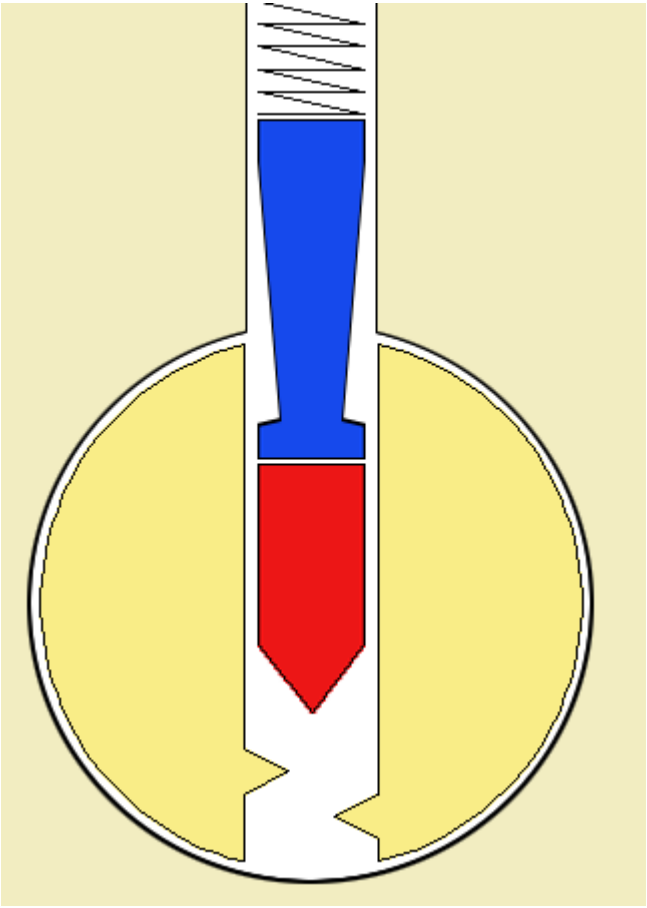
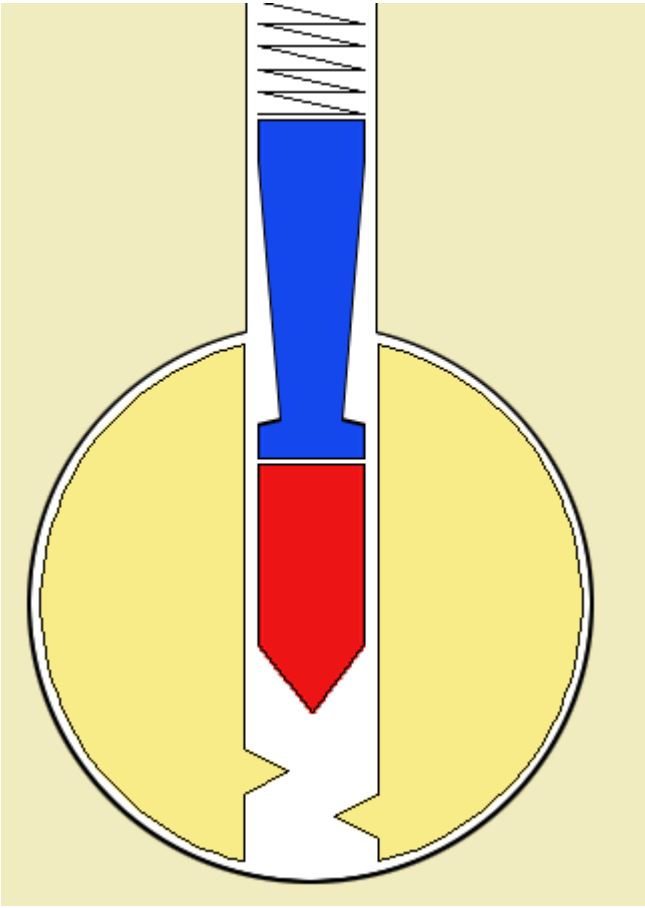
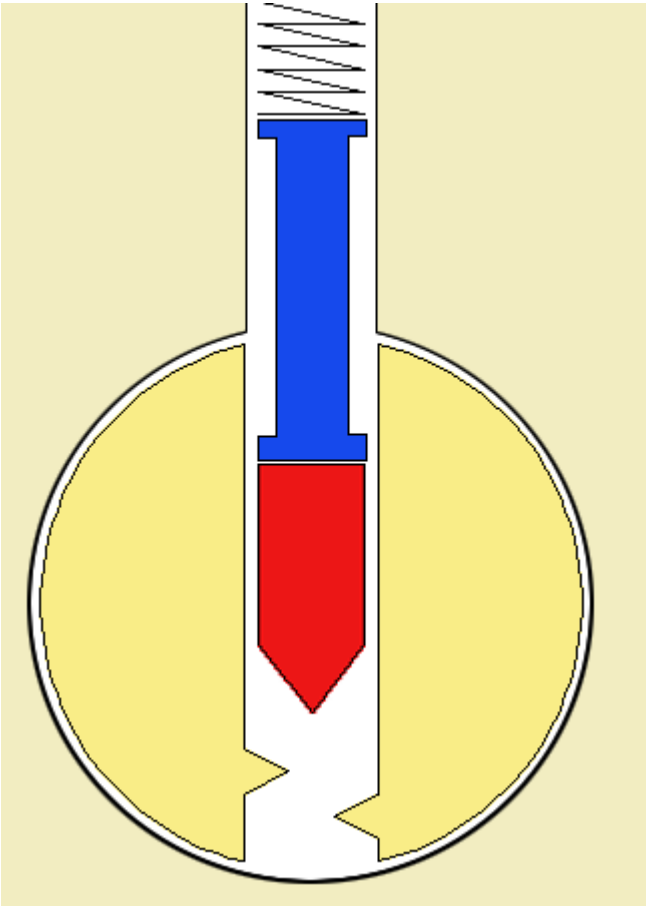
Evil. Keyway.

Security Pins (Mushrooms)

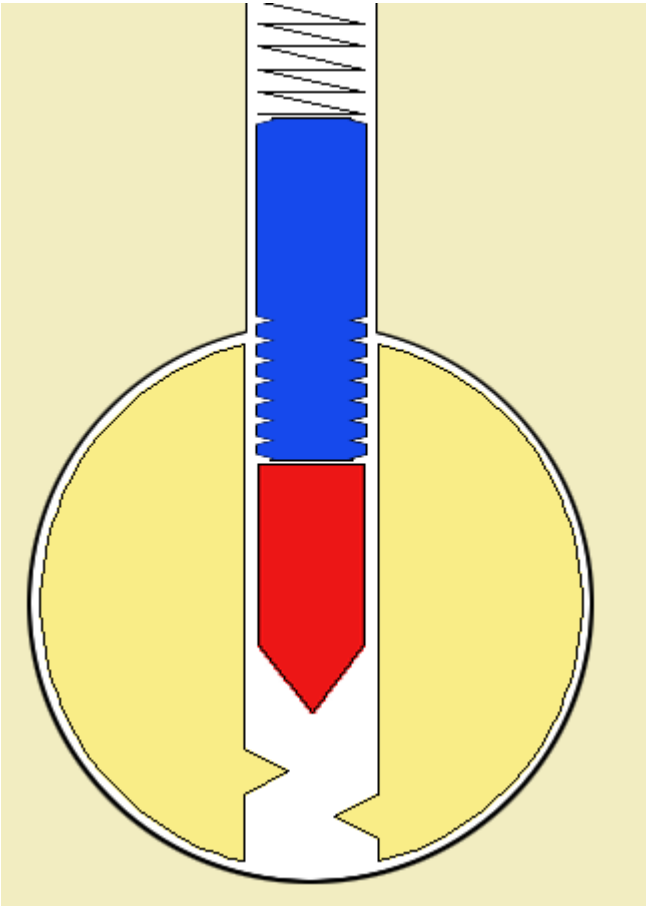




Security Pins (Spool)



Security Pins (Serrated)



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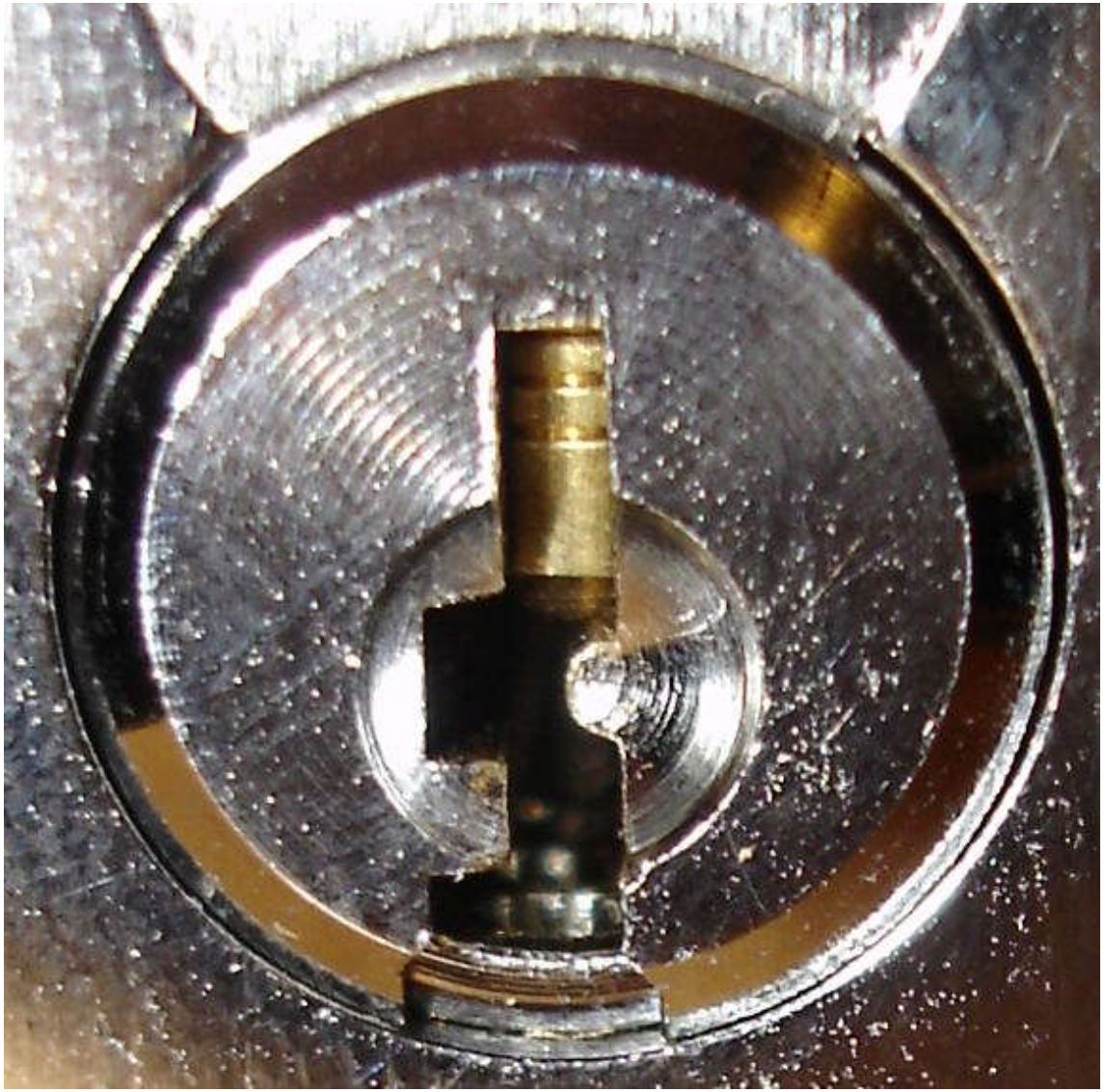
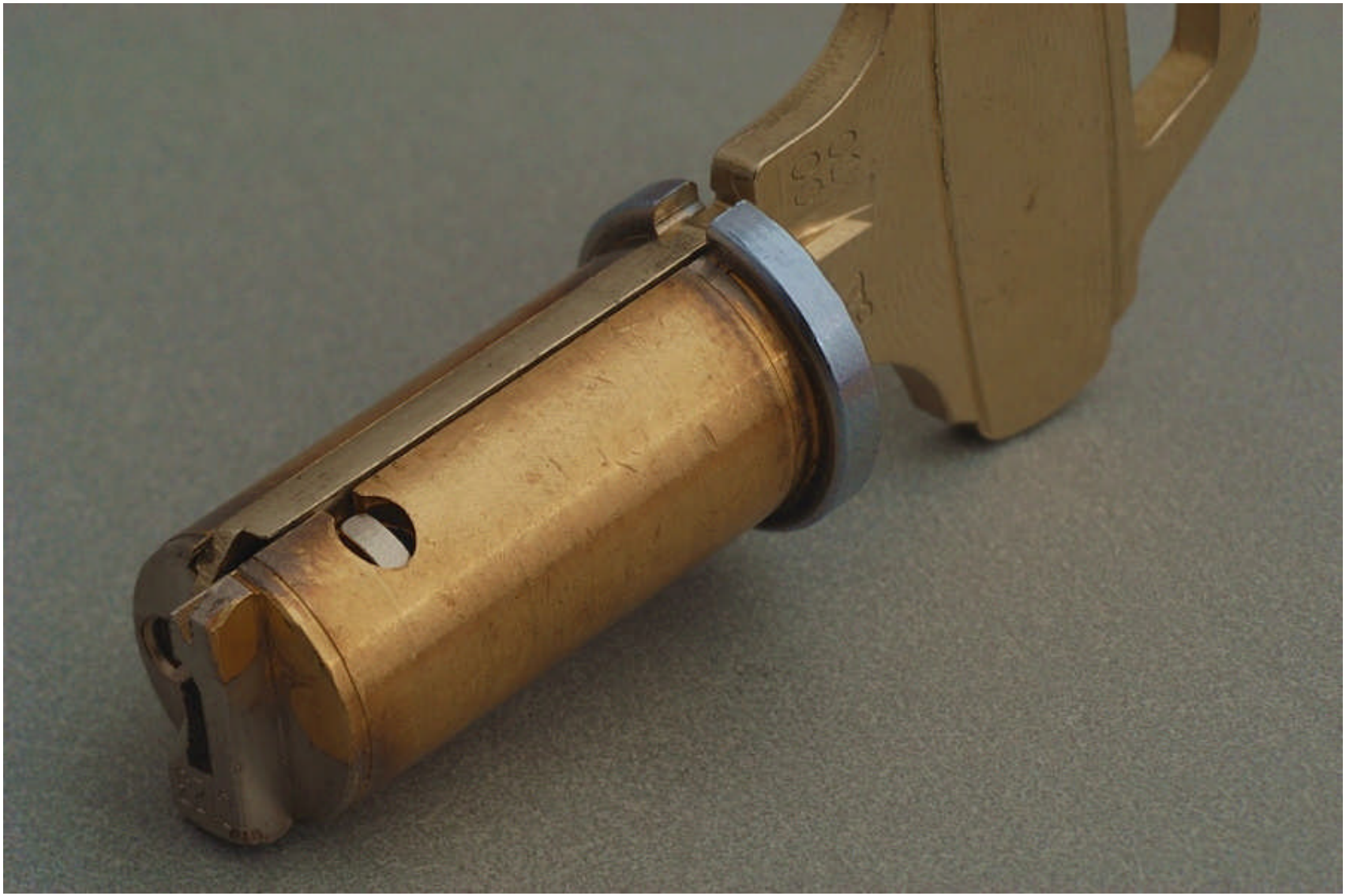


Side Pins

Side Pins

Side Pins



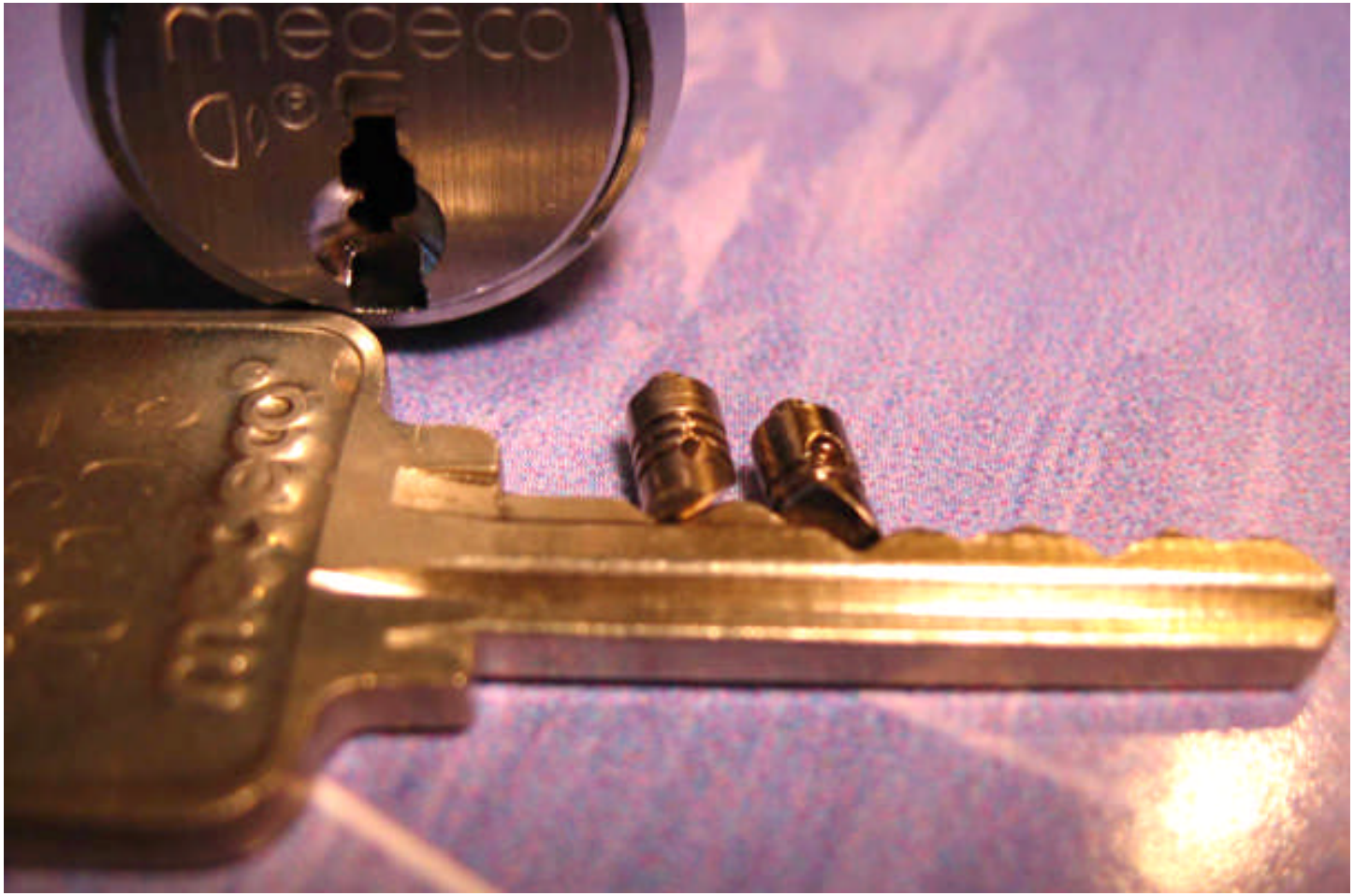
Side Pins

Side Pins

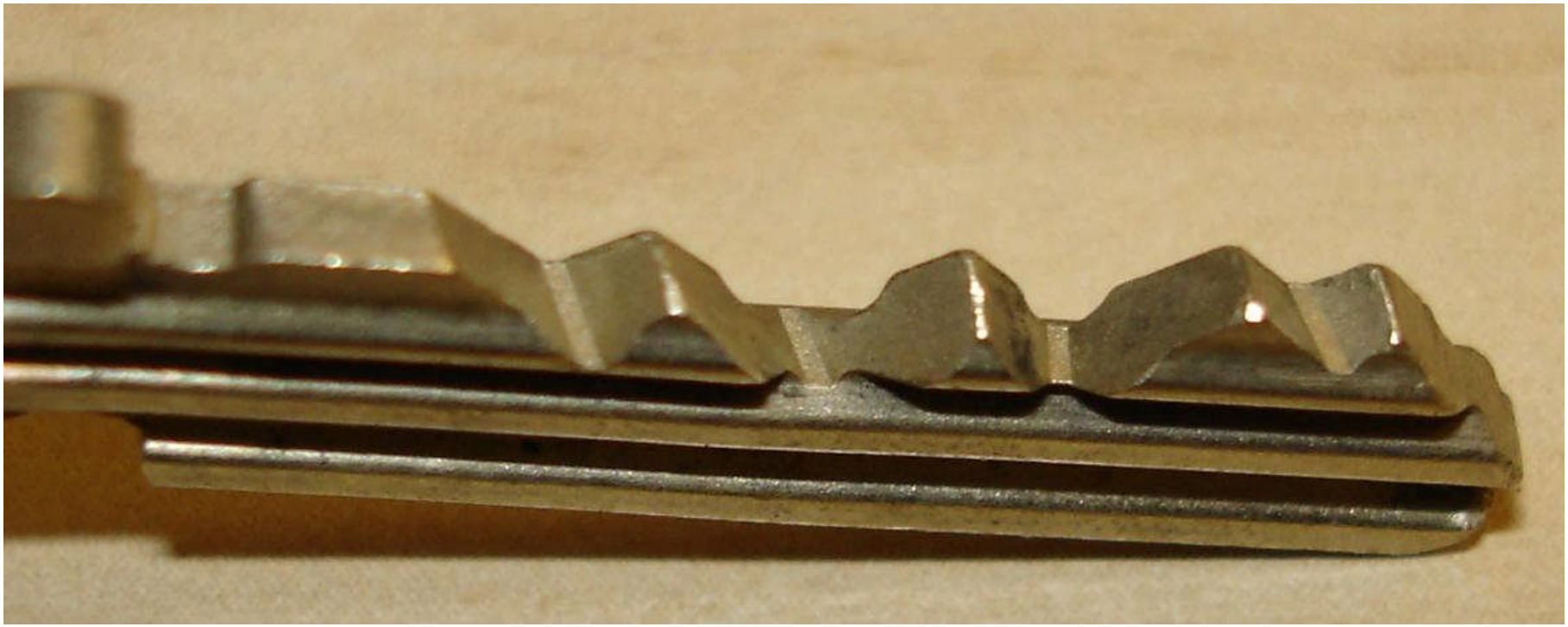
Side Bars

Axial Rotation

Axial Rotation



Axial Rotation



Types of Locks

- Pin Tumblers
- Warded
- Tubular
- Dimple

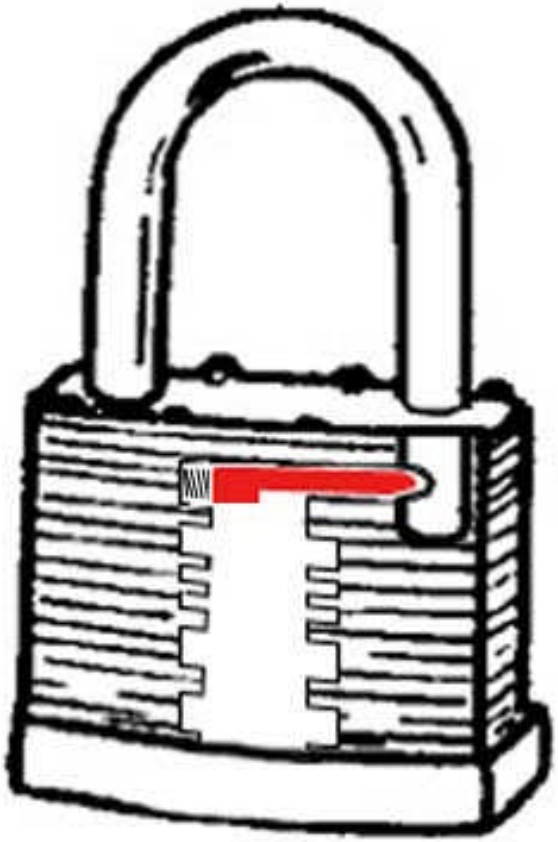
Warded Locks

- Latch and spring
- One important latch
- Other latches to get in the way

- Requires:
  - Warded picks
    - Bought
    - Home made

- Commonly found:
  - Anywhere; popular, but not as much as pin tumblers

Warded Locks



Warded Picks

Tubular Locks

- Pin stacks (4,7,8)
- Arranged in a circle

- Requires:
  - Tubular picks
  - Ballpoint pen casing

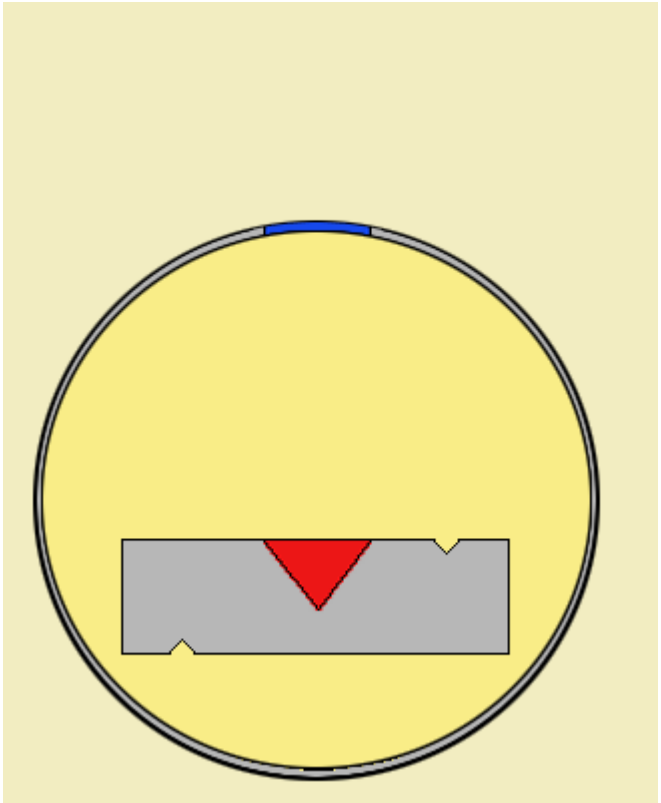
- Commonly found:
  - Vending machines
  - Bicycle locks

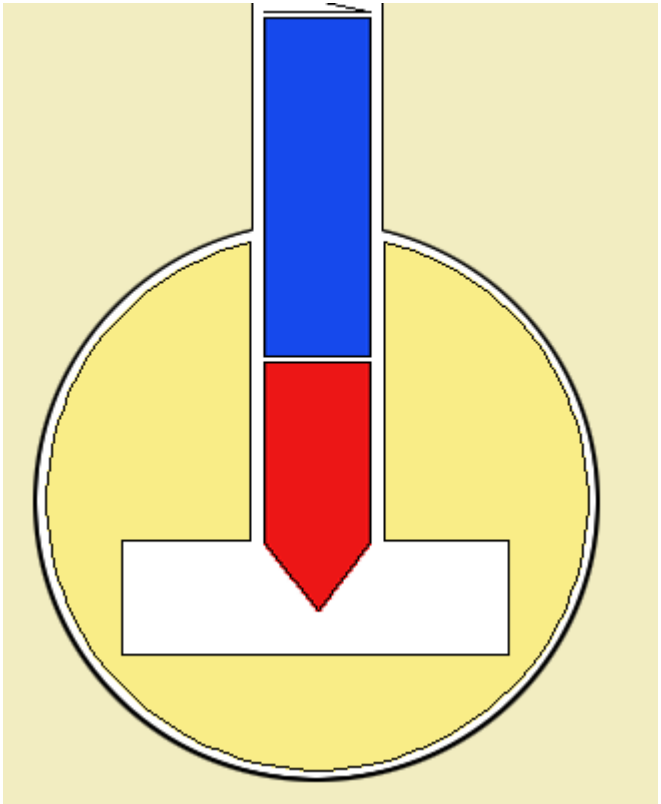
Tubular Picks

Dimple Locks

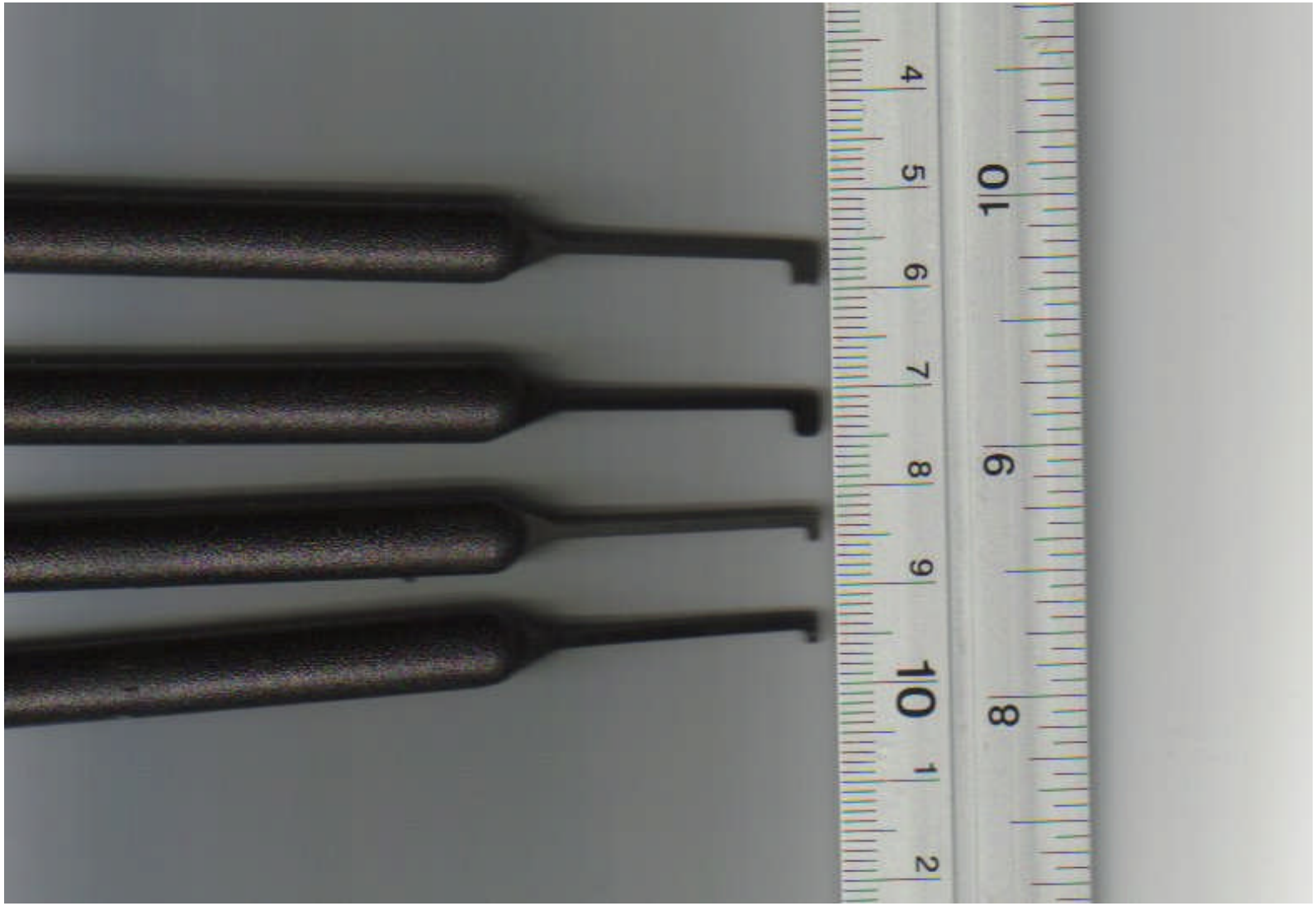
- Pin stacks
- Horizontal keyway
  - Hard to pick!
- Requires:
  - Dimple picks
  - Key bumping
- Commonly found:
  - High security locks
  - Automobile door locks
  - Automobile anti-theft devices

Dimple Locks





Dimple Picks (Souber)



Introduction to Lock bumping

- How Bumping Works
- Pick Guns
- Creating Bump keys
- Minimal movement method
- Defending against Bumping

General Response to Bumping

- Fake

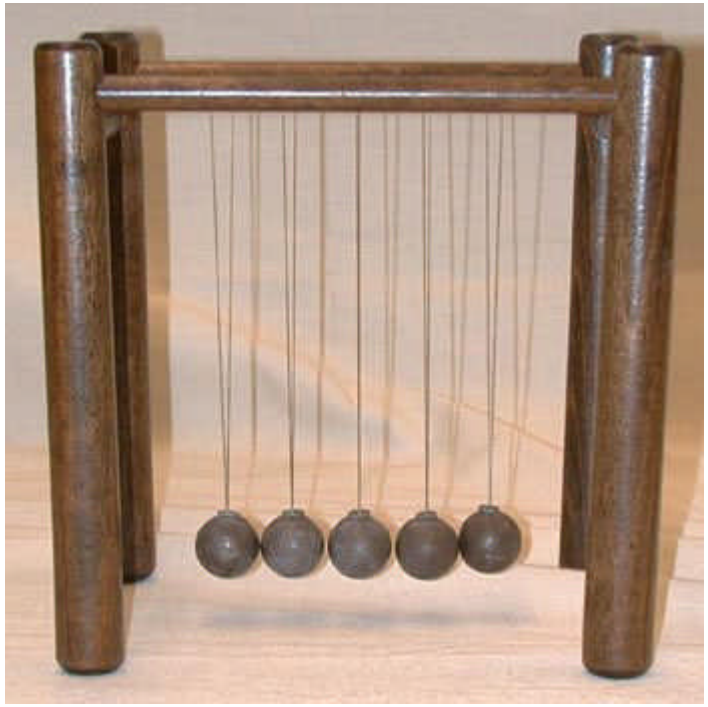
- Hard to do; only professionals can do it
- Requires massive monetary/time investment

- Requires many keys for 100% efficiency
- Keys must be made extremely exact
- Keys are hard to obtain

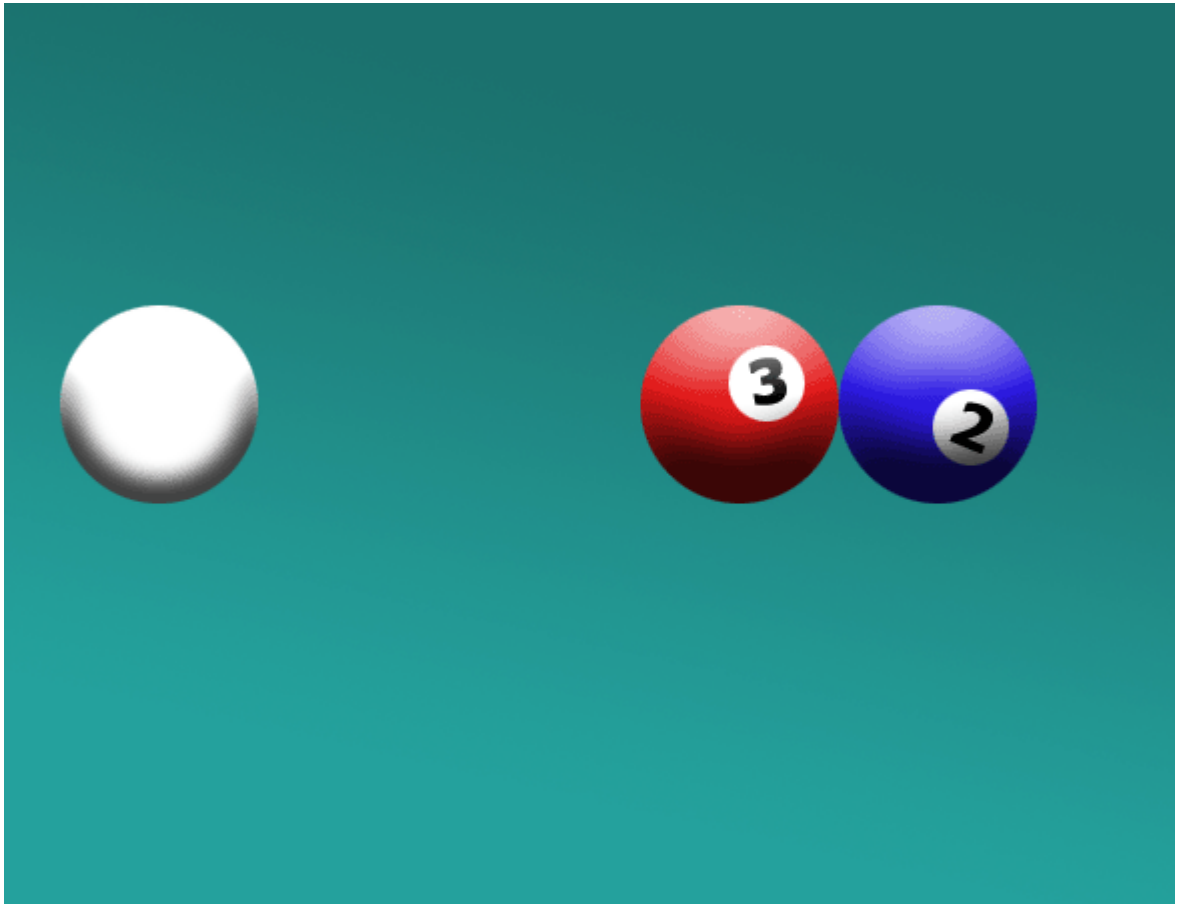
- Burglars need to know what lock it is beforehand

How Bumping Works

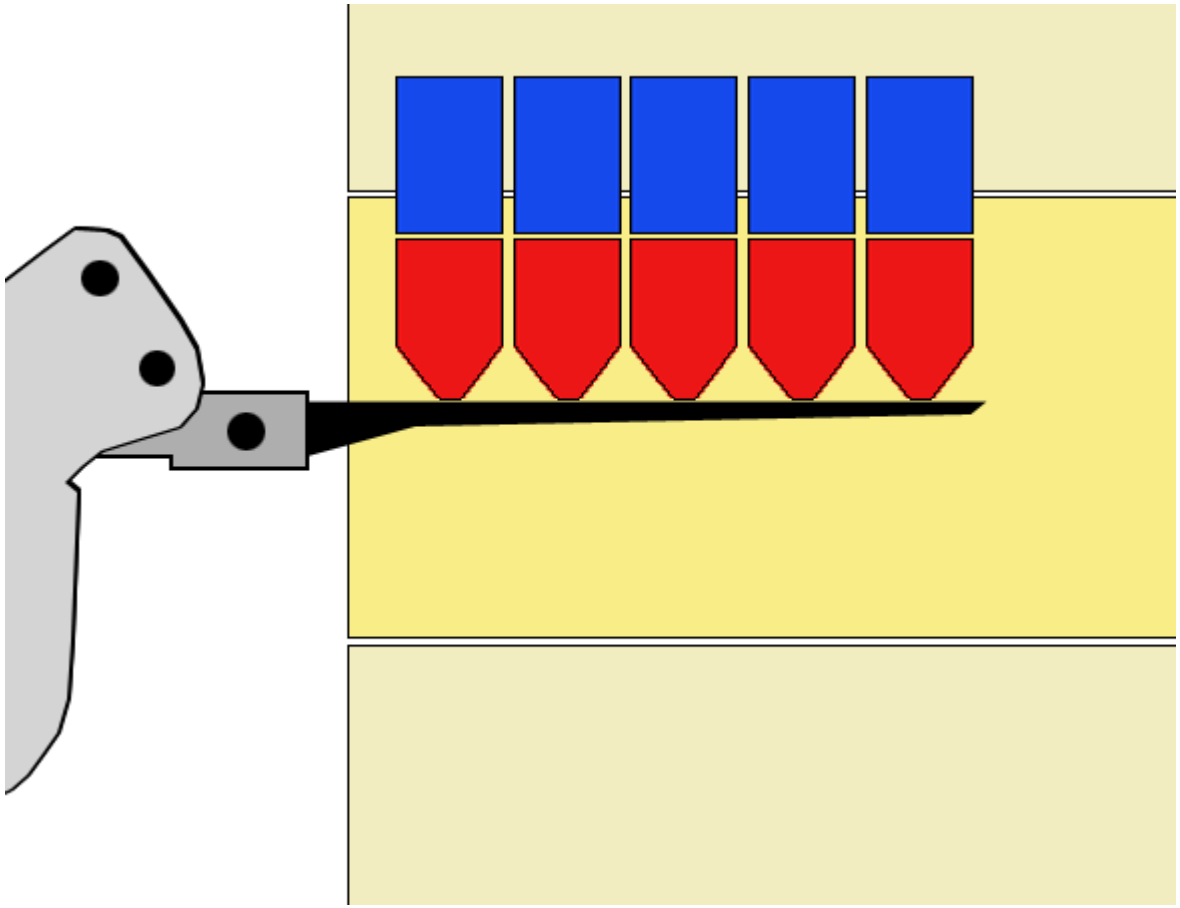
- Specialized keys
- Newton’s cradle principle
- Related to pick gun method
- Also explained by pool balls



How Bumping Works



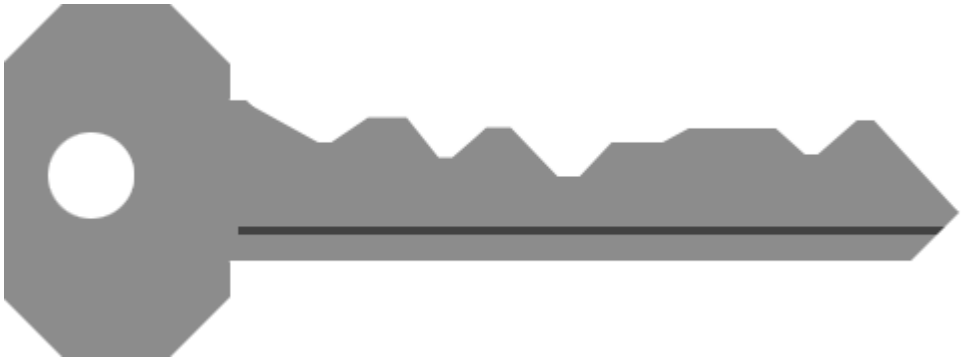
Pick Gun Mechanics



Bump Keys

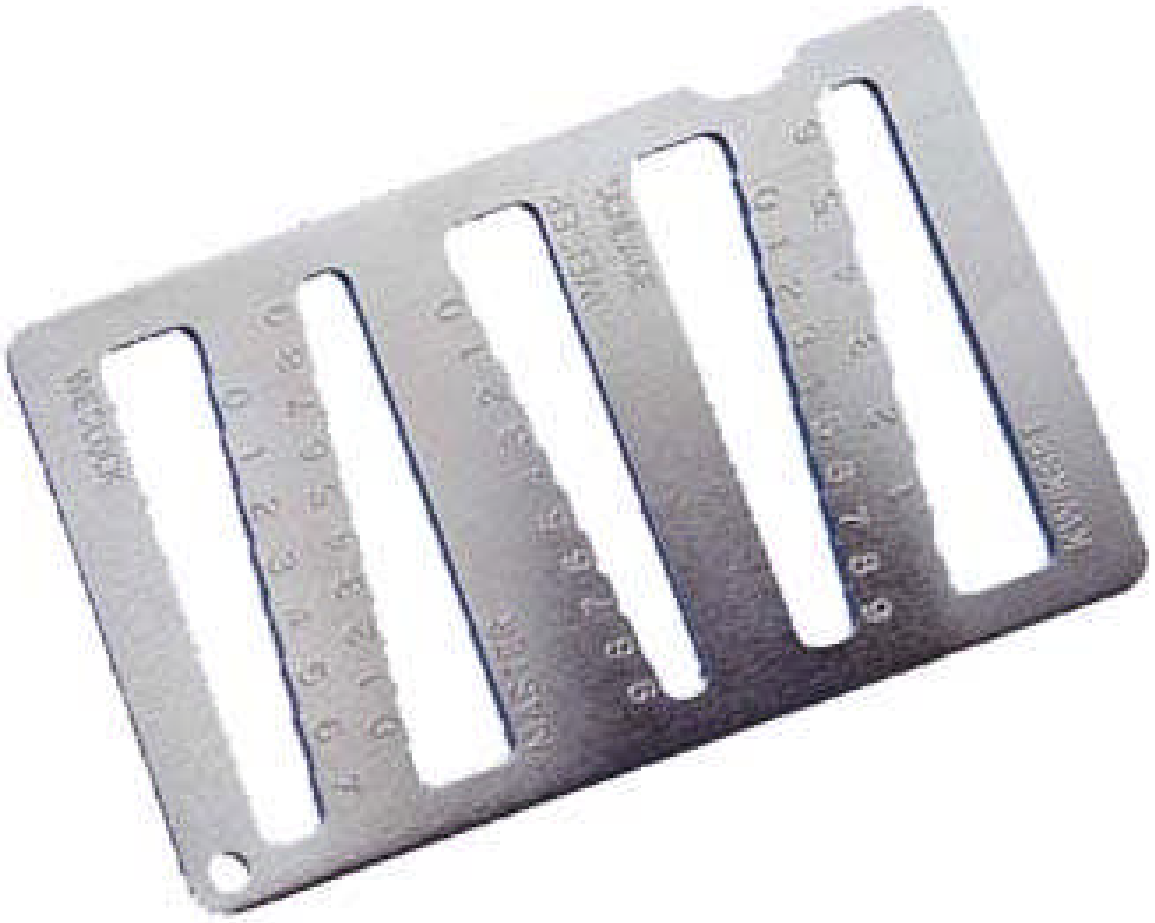
Creating Bump keys

- Obtain key that will fit the lock
- Cut “999” key, (deepest pin depths)
  - Key gauges can be used for this

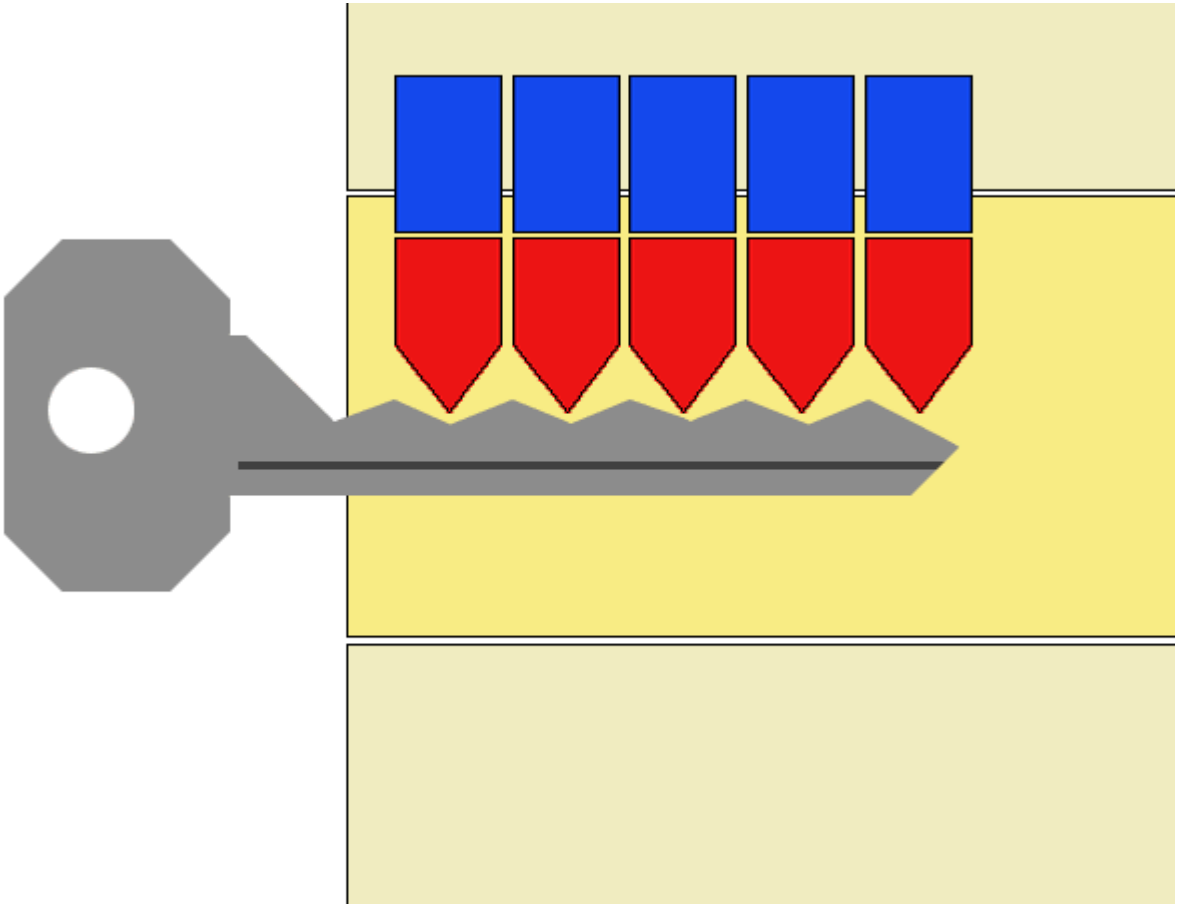


- Cut with:
  - Hand file, dremel, professional key cutter

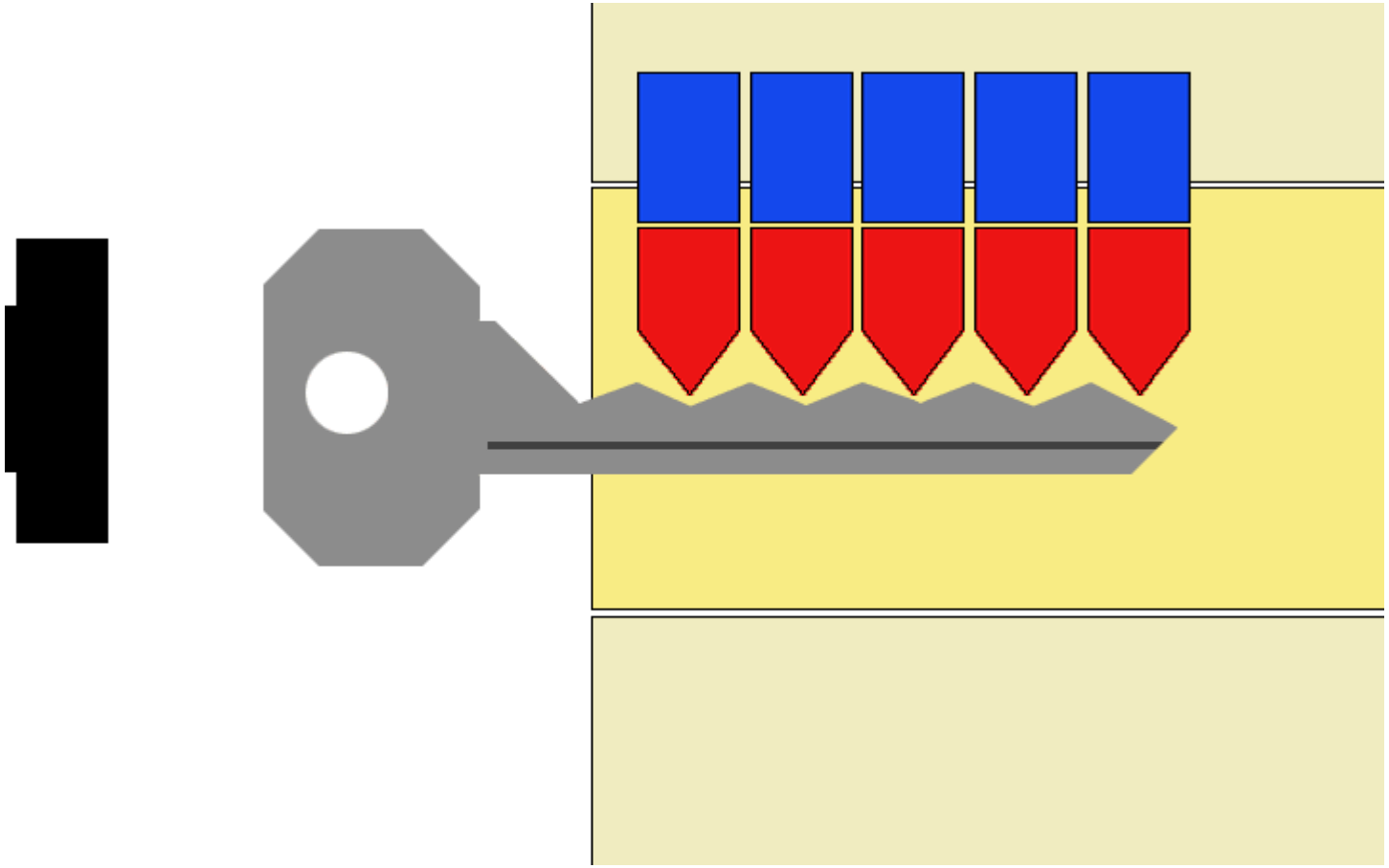
Key Gauges



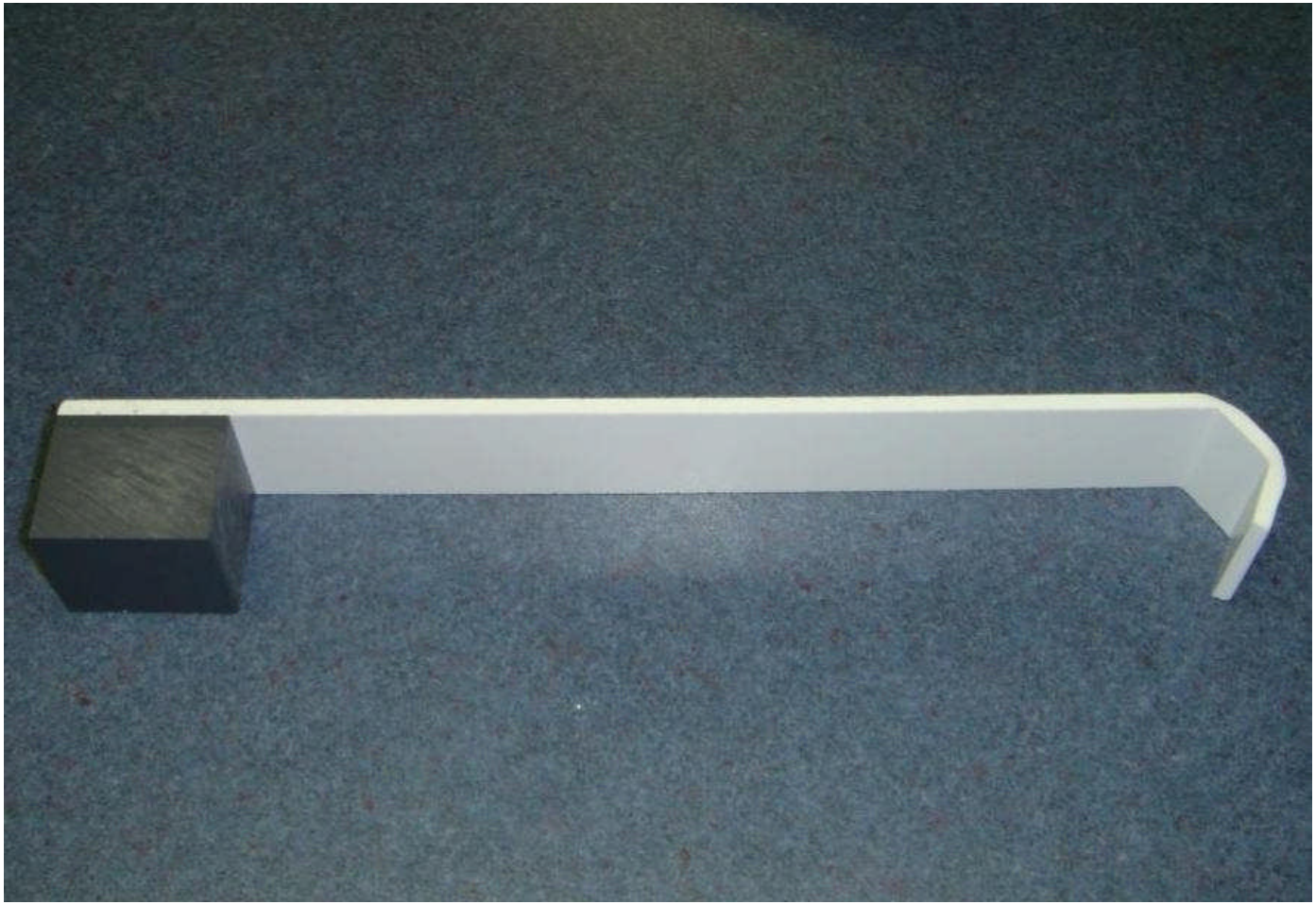
Key Bumping



Key Bumping



Bumping Hammers



- KEBump

Demonstration

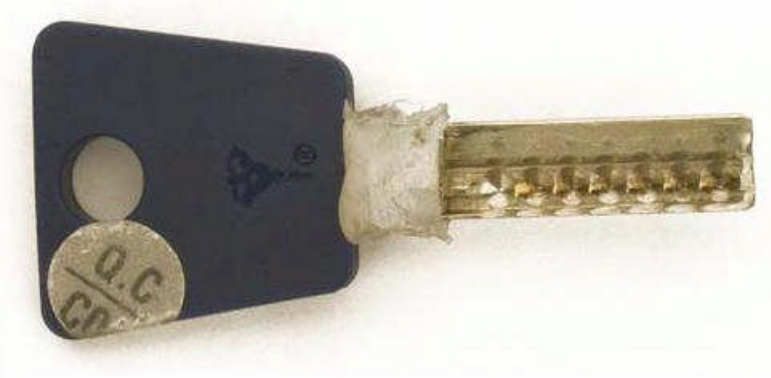
Bumping Tracks

- Slight deformations can occur
- Caused by the shoulder
- Solution? Glue gun shoulder!

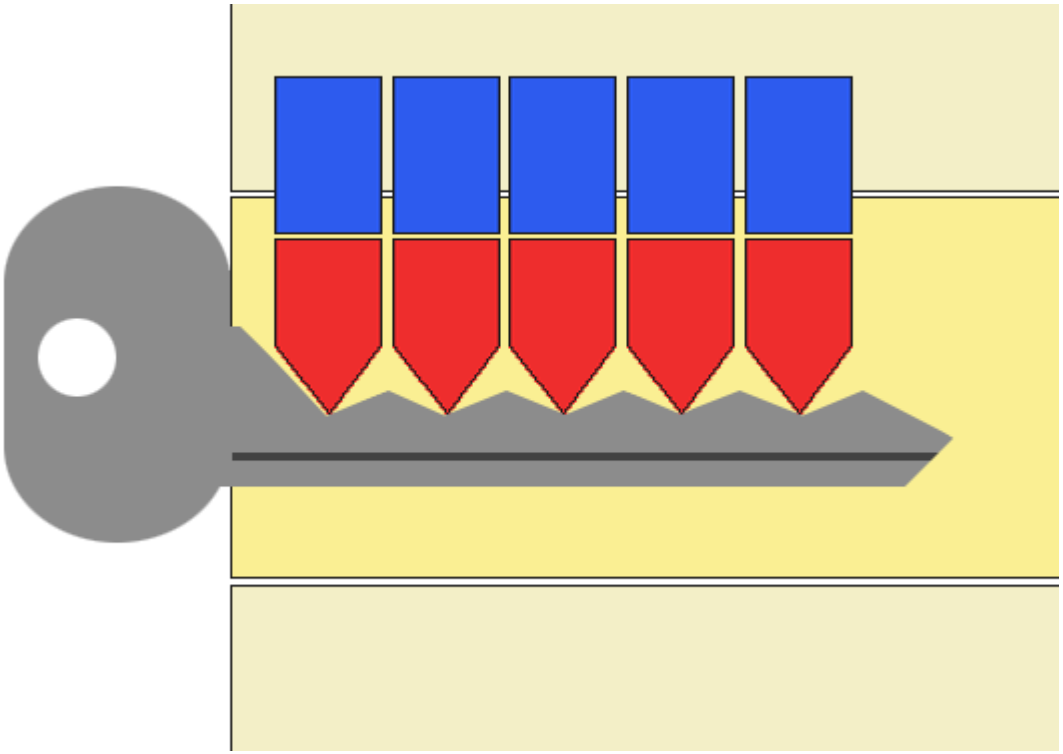
Glue Gun Shoulders

- Mitigates damage to face of lock

1. Remove shoulder on key
2. Cut glue gun stick in half
3. Heat halves and seal together on key
4. Bump!



Minimal Movement Bumping



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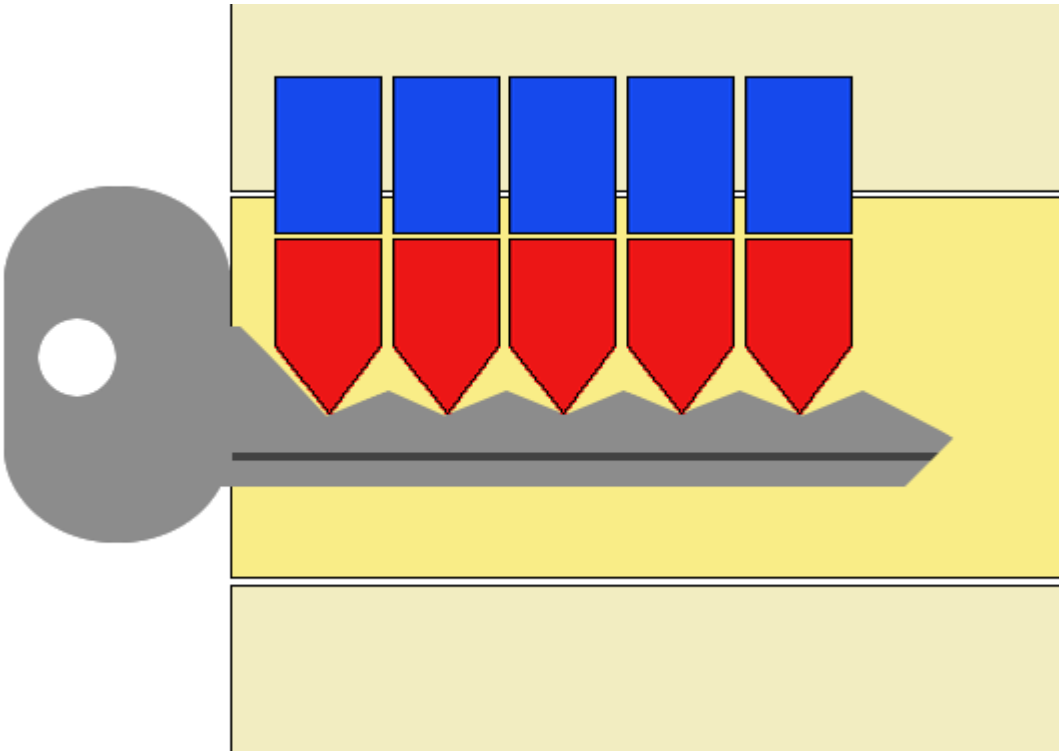

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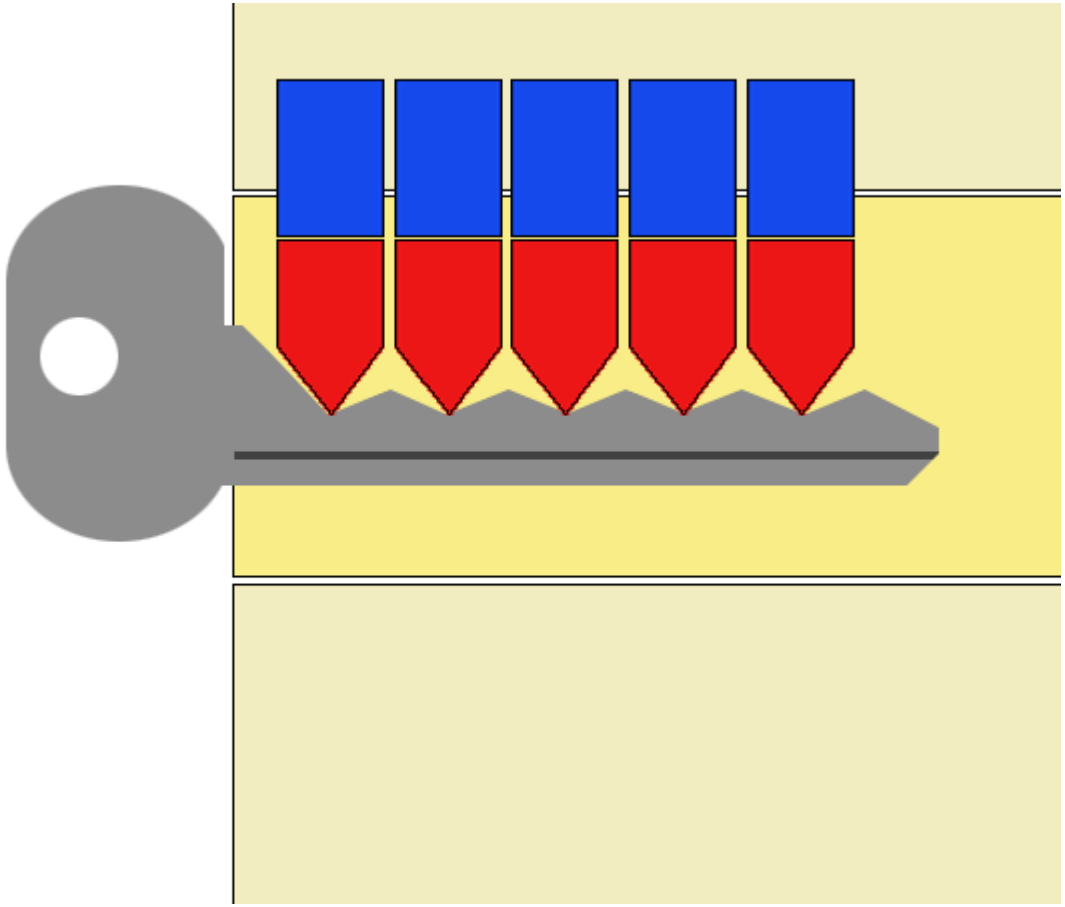
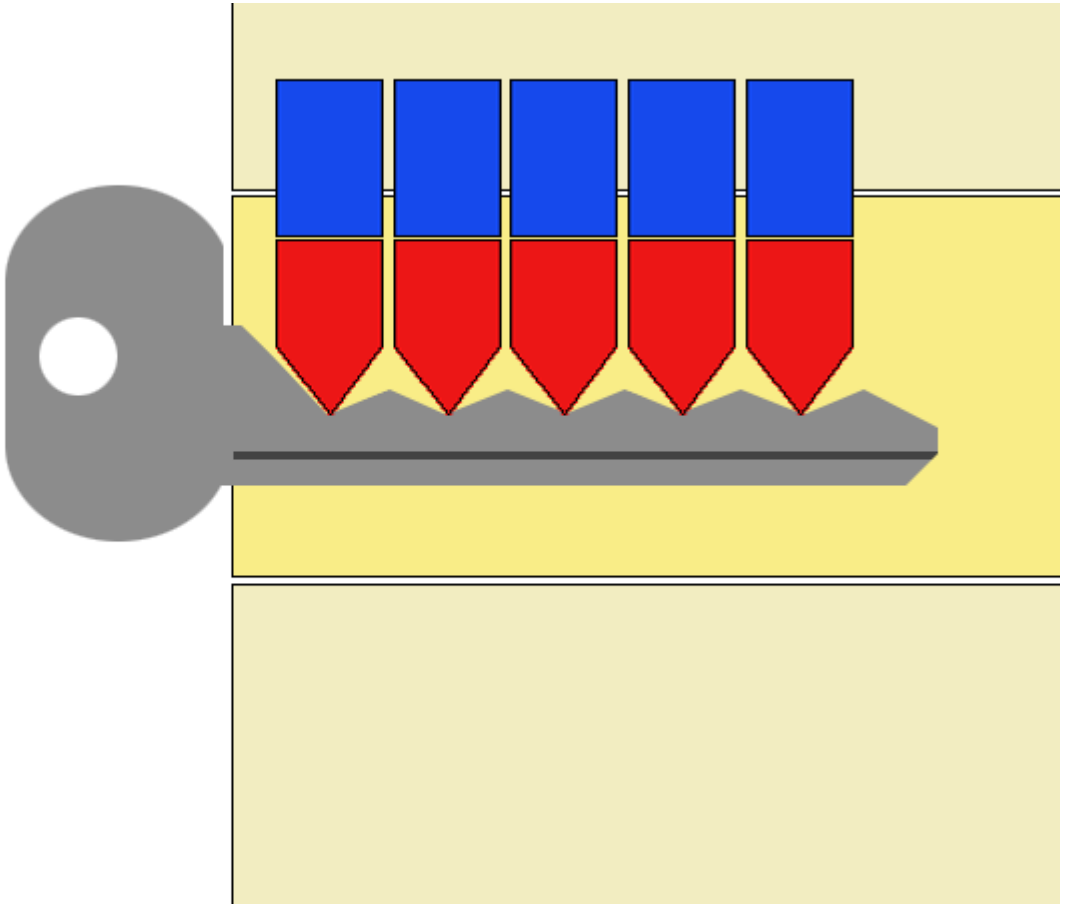


Minimal Movement Bumping



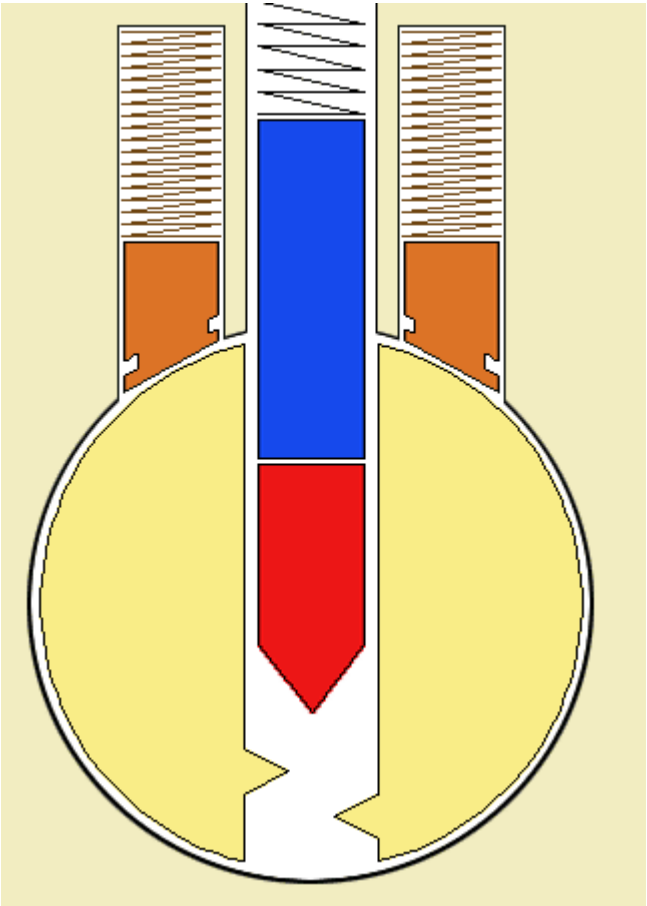
Should bumping scare you?

- Quite frankly, yes.
- Inexpensive
- Inconspicuous
- EASY
- Few locks offer protection
  - Especially in the USA
- Insurance problems

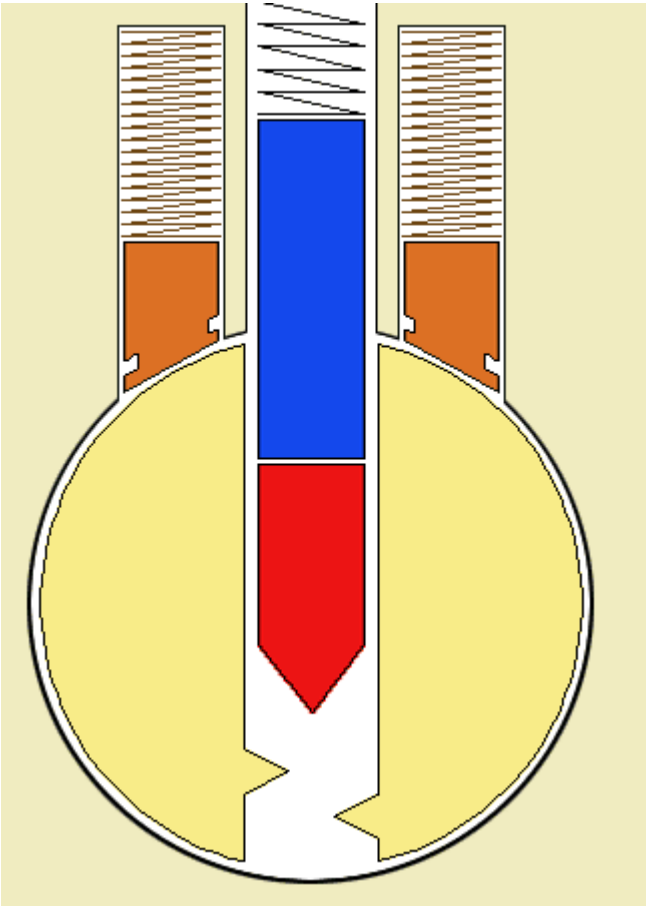
Defending against Bumping

- Sidebars
- Trap pins
- Shadow drilling

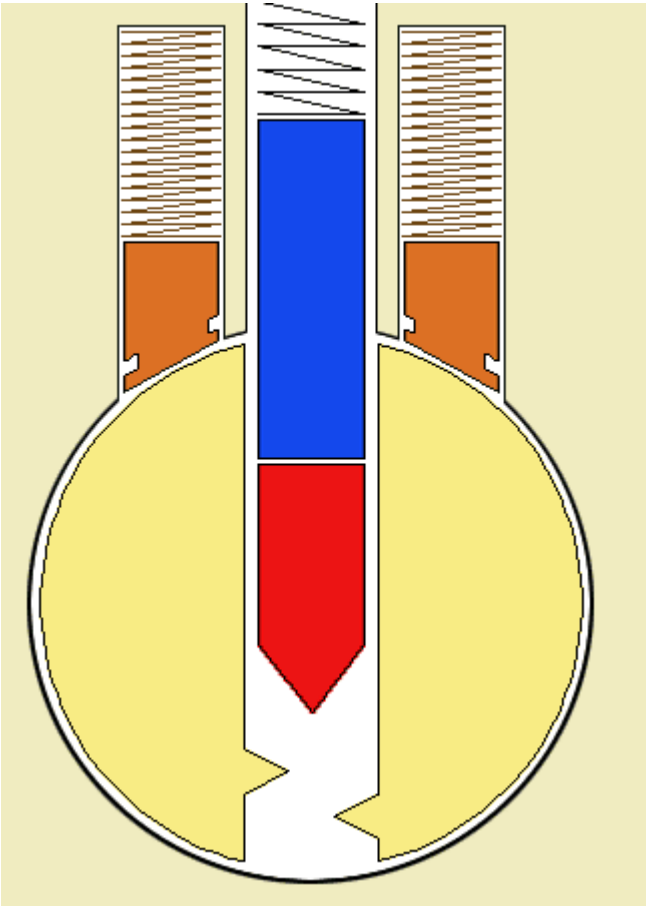
Trap Pins



Trap Pins (With Key)

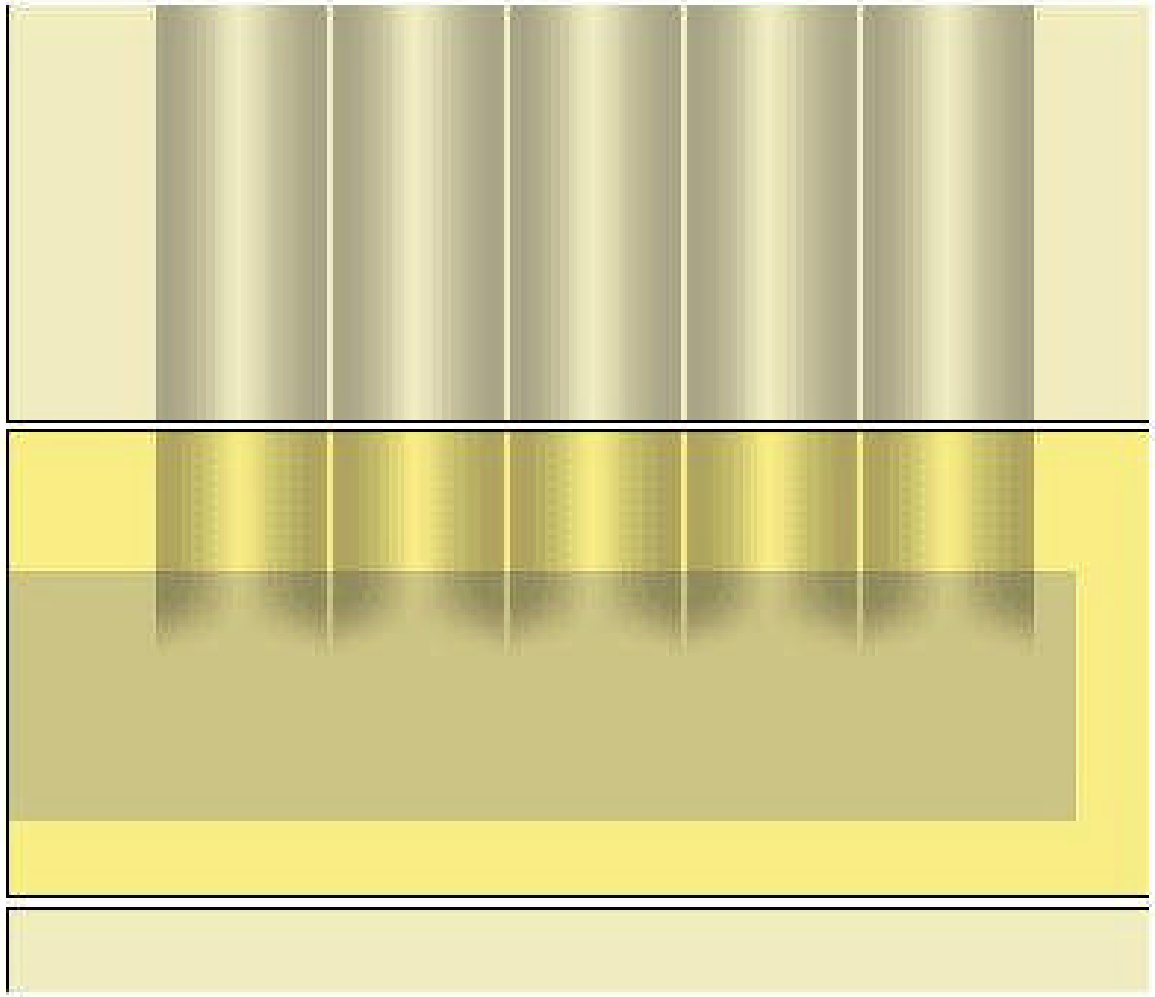


Trap Pins (Bumped)

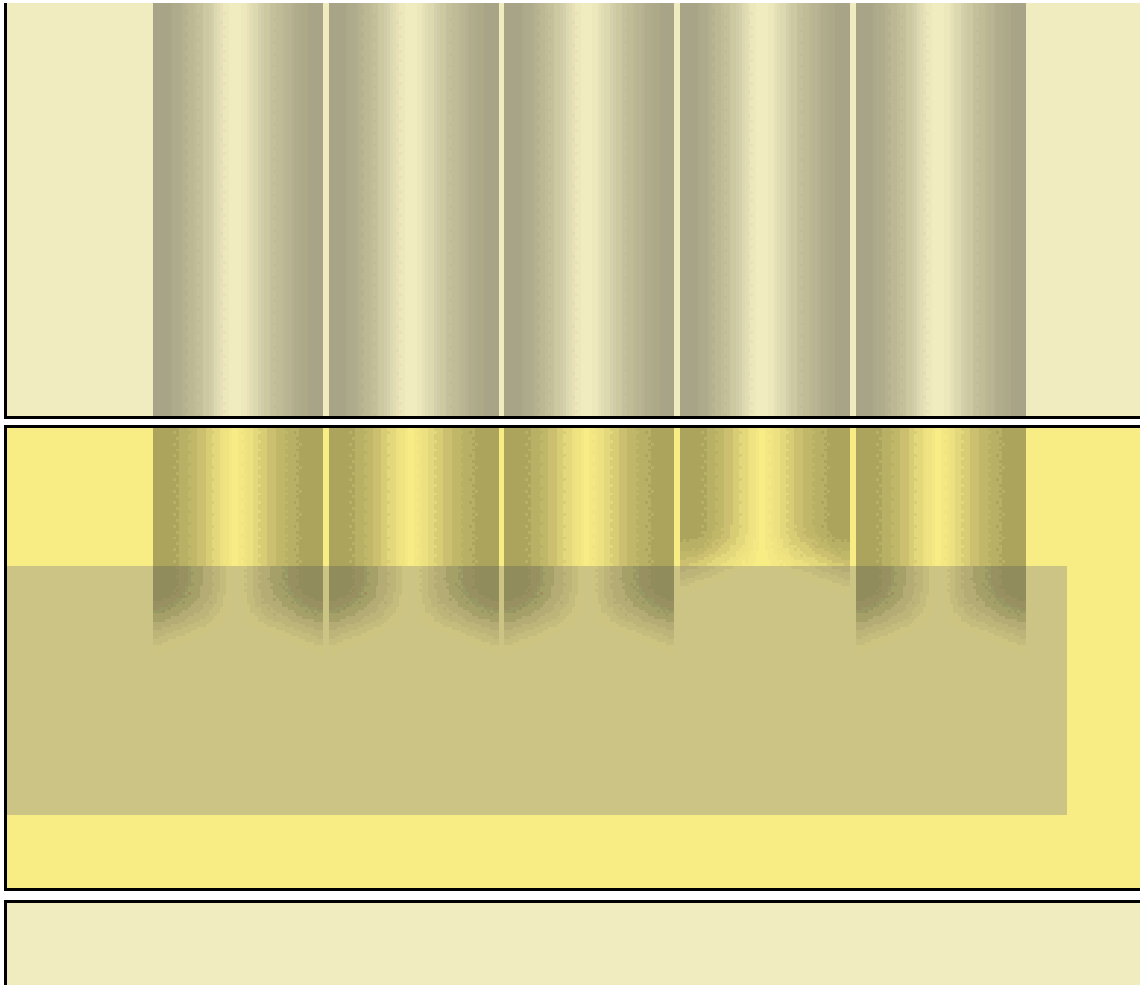


- What problem exists?

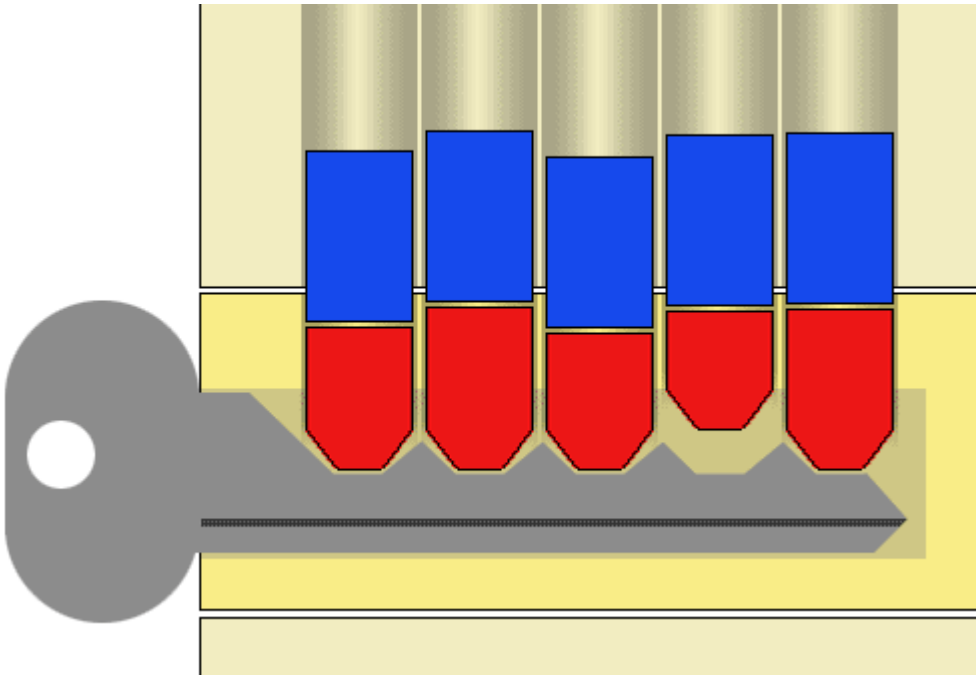
Shadow Drilling



Shadow Drilling



Shadow Drilling



Legal Issues

- Don’t be a criminal
- Purchasing
  - Variable…
  - General eligibility:
    1. Lock manufacturer/distributor
    2. Law enforcement / MP
    3. Automobile dealer
    4. Repossession
    5. Certified Locksmith
- Possession
  - “Prima facie”
  - Intent

Affordable Security

- Good Locks:
  - medeco (biaxial chisel pins)
  - BEST (SFICs)
  - ASSA (V-10)
  - ABUS (Granit & Diskus)
  - AMERICAN (700x, 2000 series)
  - SARGENT AND GREENLEAF (833 series)
  - Schlage (Primus)
  - Abloy (wafer/disk locks)
- BAD Locks:
  - Master
  - Kwikset

Buying Picks and Tools

- LayerOne sponsored by:
  - http://lockpickshop.com
    - Great for picks, pick sets, misc. tools (gauges, spinners, etc), and practice cylinders.
- Also check out http://lockpicks.com
    - They offer some items that LPS does not, such as key blanks, key cutters, and other such tools.

Links

- TOOOL
  - http://toool.nl

  Bumping PDF:
  - http://toool.nl/bumping.pdf

  MIT Guide to Lockpicking:
  - http://toool.nl/pdf/mit.pdf
- Marc Tobias
  - http://security.org
- Barry Wels
  - http://connect.waag.org/toool
- Lockpicking Forums
  - http://lockpicking101.com
- Lockpick Vendors
  - **http://lockpickshop.com**
  - http://lockpicks.com
  - http://southord.com
  - http://peterson-international.com
- KEBump
  - http://kebump.com

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Questions ?

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